MX7 Tecton™ for Windows Mobile Reference Guide

Microsoft® Windows® Mobile® 6.5 Operating System

LXE | **WORX** | **Handheld Computer**

E-EQ-MX7WMRG-A

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Introduction

The **LXE® MX7 Tecton** handheld computer is a rugged, portable personal computer equipped with a Microsoft® Windows® operating system.

This MX7 Tecton™ for Windows Mobile Reference Guide has been developed for a MX7 Tecton with a Microsoft® Windows® Mobile® 6.5 operating system.

This device can transmit information using an 802.11 network card and it can store information for later transmission through an RS-232 or USB port. The MX7CS (Cold Storage) device functions normally in various temperature ranges.

The MX7 Tecton is vertically oriented and features backlighting for the display. Keypads are available in 55-key alphanumeric and 32-key numeric-alpha versions.

This device can be scaled from a limited function batch computer to an integrated wireless scanning computer. A trigger handle is available as an accessory.

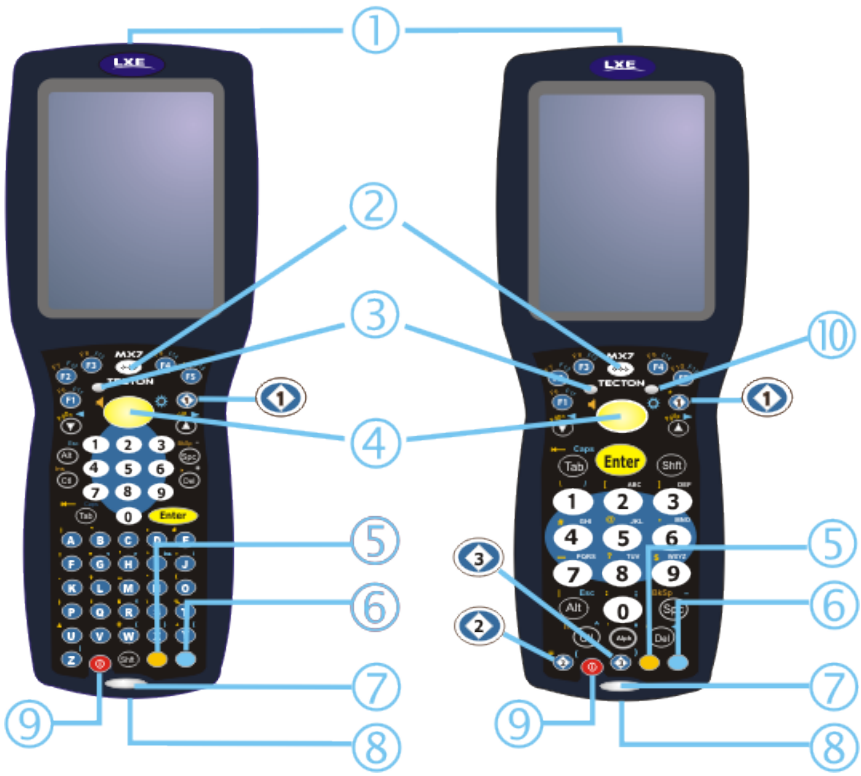
The stylus attached to the handstrap is used to assist in entering data and configuration. Protective film for the touch screen is available as an accessory.

The MX7 Tecton is powered by a 2200 mAh Lithium-Ion main battery pack and an internal Super-capacity (Super-cap) battery.

Note: There is no Warm Boot/Warm Start/Warm Reset (as used in other versions of Microsoft operating systems) function available for Windows Mobile devices. Suspend/resume performs the equivalent function.

Components

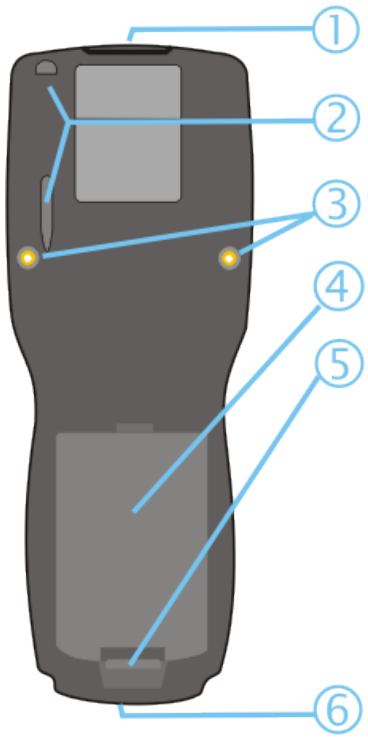
Front



1. Scanner/Imager Aperture
2. Speaker
3. System Status LED
4. Scan Button
5. Orange Key (Sticky Key)
6. Blue Key (Sticky Key)
7. Scan Status LED
8. Cable Port
9. On / Off Button
10. Alpha Lock LED (32 Key keypad only)

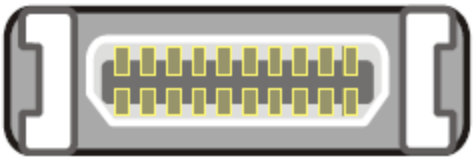
Diamond Keys

Back



1. Scanner/Imager Aperture
2. Stylus and Stylus Pocket
3. Trigger Handle Attach Points
4. Main Battery
5. Battery Fastener
6. Cable Port

I/O Port and Cables

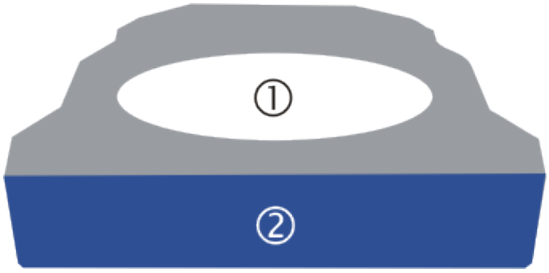


I/O Port

Cable: Multipurpose RS-232 and Power MX7055CABLE	

Cable: Multipurpose USB and Power MX7052CABLE	
Adapter/Cable : Audio MX7060CABLE	
Adapter: RS-232 PC port to D9 male MX7058CABLE	

Scanner / Imager Aperture

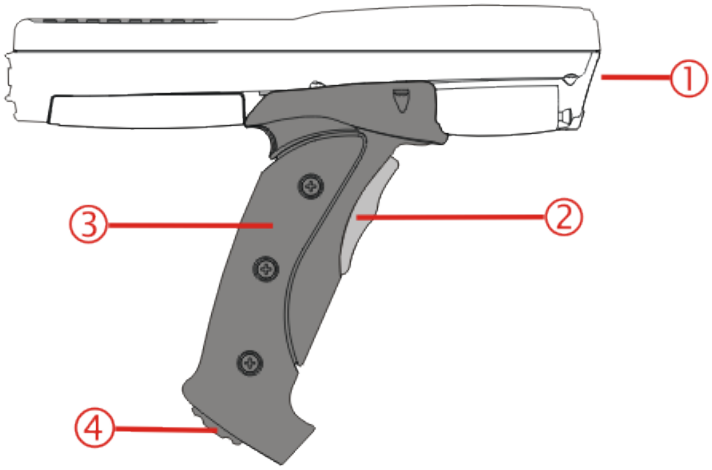


1. Scanner Aperture
2. MX7 Tecton Front

Caution: Never stare directly into the beam aperture.

If **Continuous Scan Mode** has been enabled (default is disabled), the laser is always on and decoding. Caution: Laser beam is emitted continuously. Do not stare into the laser beam.

Handle



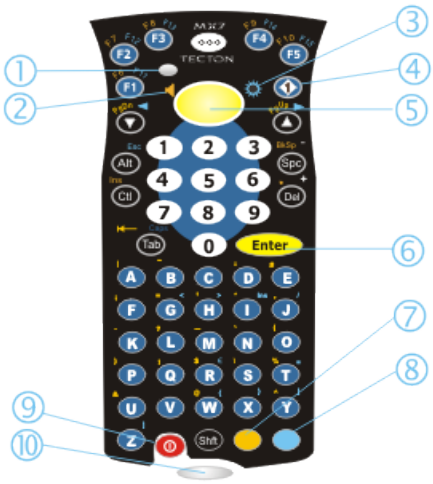
1. Imager / Scanner Aperture
2. Trigger
3. Handle
4. Tether Attach Point

Handstrap

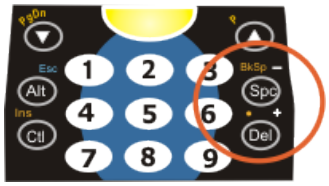
1. Handstrap
2. Handstrap Retainer Bracket and mounting screws
3. Handstrap Clip

Keypads

55 Key Delete Primary ANSI Keypad

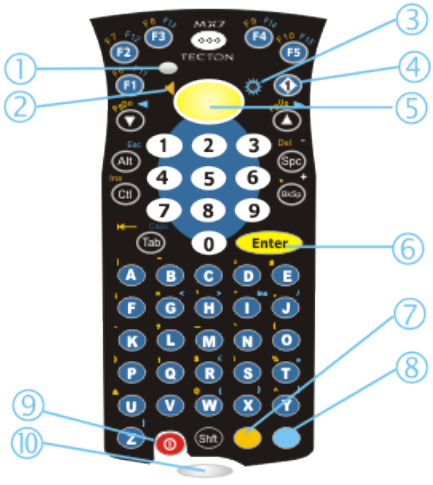


1. System Status LED
2. Volume Control Icon
3. Display Brightness Icon
4. Diamond Key
5. Scan Button
6. Enter Key
7. Orange Key (Sticky Key)
8. Blue Key (Sticky Key)
9. On Off Button
10. Scan Status LED



Spc and Del key location

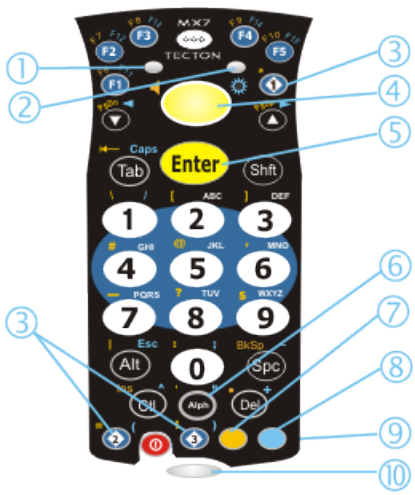
55 Key Backspace Primary ANSI Keypad



1. System Status LED
2. Volume Control Icon
3. Display Brightness Icon
4. Diamond Key
5. Scan Button
6. Enter Key
7. Orange Key (Sticky Key)
8. Blue Key (Sticky Key)
9. On Off Button
10. Scan Status LED

Spc and Bksp key location

32 Key Numeric-Alpha Keypad



1. System Status LED
2. Alpha Status LED
3. Diamond Keys
4. Scan Button
5. Enter Key
6. Alph Key
7. Orange Key (Sticky Key)
8. Blue Key (Sticky Key)
9. On Off Button
10. Scan Status LED

MX7 Tecton Troubleshooting

Can't change the date/time or adjust the volume.	AppLock is installed and may be running in User Mode on the MX7 Tecton. AppLock user mode restricts access to the control panels.
Touchscreen is not accepting stylus taps or needs recalibration.	Press <Ctrl>+<Esc (Blue+Alt)> to force the Start screen to appear. Use arrow keys to move from program to program. Press Enter to start a program or open folder (Settings, etc.).
The MX7 Tecton seems to lockup as soon as it is rebooted.	There may be slight delays while the wireless client connects to the network, authorization for voice-enabled applications complete, Wavelink Avalanche management of the MX7 Tecton startup completes, and Bluetooth relationships establish or re-establish. When the desktop appears or an application begins, the MX7 Tecton is ready for use.
New MX7 Tecton main batteries don't last more than a few hours.	New batteries must be fully charged prior to first use. Li-Ion batteries (like all batteries) gradually lose their capacity over time (in a linear fashion) and never just stop working. This is important to remember – the MX7 Tecton is always 'on' even when in the Suspend state and draws a small amount of battery power at all times. *Note: Cold Storage Battery Life – minimum 2.5 hours while the unit is roaming, powered on with ambient temperature -10°C (14°F) or above, Display backlight turned on, Keypad LED backlight on, radio connected to Access Point, and scanner decoding barcodes. The LXE Li-Ion main battery (MX7A381BATT and MX7393BATT) has been designed specifically for the Cold Storage device. This 1250mAh battery has a blue label while the standard 2200mAh battery has a white (MX7A380BATT and MX7392BATT) label.*
Keep losing ActiveSync connection between my host computer and the MX7 Tecton.	Disconnect the cable, wait 1-2 seconds and reconnect the cable. The MX7 Tecton will not enter suspend as long as an ActiveSync session is running. ActiveSync session prevents it from going into suspend.

Locking the MX7 Tecton

The MX7 Tecton can be locked manually by tapping Start | Lock. By default, this option is included on the Start screen at the bottom of the screen. Care should be taken to not accidentally tap this area of the Start screen.

Note: Review the Unlock process before locking the MX7 Tecton.

Lock can be removed from the Today screen by selecting Start | Settings | Today | Items tab. Deselect *Device Lock*.

The MX7 Tecton can also be configured to Lock automatically after a defined period of inactivity. This setting is accessed via Start | Settings | Lock | Password tab. By default, this option is Disabled.

The password and hint are configured by selecting Start | Settings | Lock | Password and Hint tabs.

Unlocking the MX7 Tecton

When the MX7 Tecton is locked, the Start screen displays *Unlock* at the lower part of the screen.

- If there *is no password* or PIN set, tap Unlock on the next screen to unlock the MX7 Tecton. The MX7 Tecton is returned to normal operation.
- If there *is a password* or PIN set, enter the password/PIN and tap Unlock. If several unsuccessful attempts are made, the MX7 Tecton may be configured to display a password hint.

Reboot Sequences

When the Windows Mobile Today panel is displayed or an application begins, the power up sequence is complete. If you have previously saved your settings, they will be restored on reboot. Application panel changes are saved when ok is tapped on an application properties panel.

Note: There is no Warm Boot/Warm Start/Warm Reset (as used in other versions of Microsoft operating systems) function available for Windows Mobile devices. Suspend/resume performs the equivalent function.

During the processes that follow there may be small delays while the wireless client connects to the network and Bluetooth relationships establish or re-establish.

Suspend / Resume

Quickly tapping the Power key places the MX7 Tecton in Suspend mode. Quickly tapping the Power key again, pressing any key, pressing the trigger (on the trigger handle), or tapping the touchscreen, returns the MX7 Tecton from Suspend.

or

Hold down the Power key and then the Enter key until the screen blanks. Release the keys and the MX7 Tecton resumes.

Cold Boot / Restart

Temporary data not saved is lost. All programs are re-launched, programs installed from CAB files are reinstalled. Previously saved user settings are restored. Restart may also be called cold boot. Hold down the Blue key, the Scan key and the Power key until the screen blanks. Release the keys and the MX7 Tecton cold boots.

Be sure to press the Scan key not the Enter key. Pressing the Enter key begins a suspend/resume function instead of a cold boot function.

Clean Boot / Reset

Important -- Because of the extreme nature of resetting the MX7 Tecton to factory default settings, LXE recommends that this process be used only as an emergency procedure and suspend/resume or cold boot be used whenever necessary.

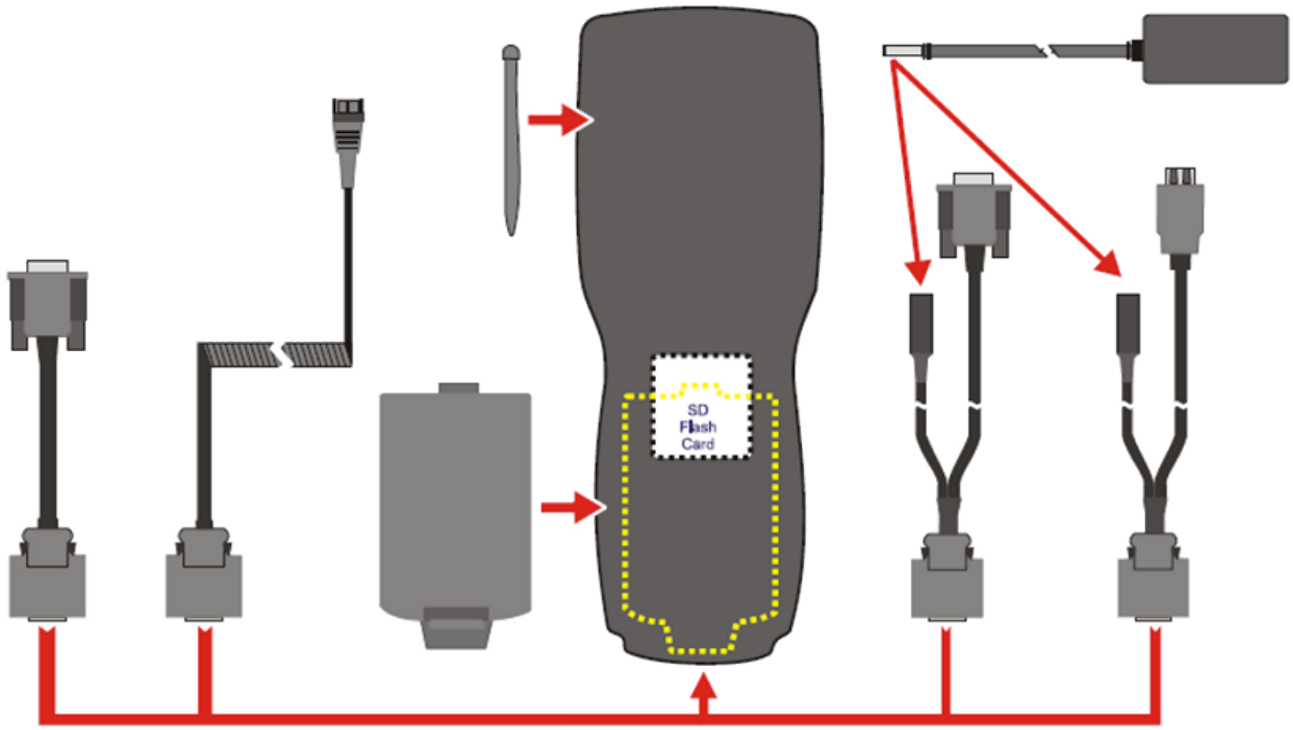
To reset **all** MX7 Tecton configuration to factory defaults:

1. Hold down the Blue + Scan + Power keys at the same time. After the keypress, the display turns solid white. Be sure to press the Scan key, not the Enter key.
2. Release the keys and immediately press and hold the Enter + Scan keys. After the keypress, the display turns dark. (If these keys are not pressed immediately the MX7 Tecton performs a Cold Boot. Wait until the MX7 Tecton boots and try again.)
3. Release the Reset keys. A message is displayed at the bottom of the display stating the change is in process. If the message does not appear, please try again.

When all programs have finished loading, the Windows Mobile Start screen is displayed. If prompted, tap the touchscreen to set up your Windows Mobile based device.

Hardware

System Hardware



802.11 a/b/g Wireless Client

The MX7 Tecton has an LXE 802.11 network card that supports diversity with two internal antennas. The CPU board does not allow hot swapping the network card. WEP, WPA and LEAP are supported.

Central Processing Unit

The CPU is an 806MHz Intel Xscale PXA320 CPU. The operating system is Microsoft® Windows® Mobile® 6.5. The OS image is stored on an internal SD flash card and is loaded into DRAM for execution. Turbo mode is supported and turned on by default.

The MX7 Tecton supports the following I/O components of the core logic:

- One SD card slot under the main battery pack.
- One serial port.
- One Digitizer Input port (Touchscreen).

Program CAB files, utilities, wireless drivers, the registry and registry backup information are stored in internal Flash.

System Memory

The CPU configuration supports 256MB on-board flash. The system optimizes for the amount of RAM available.

Internal flash is used for boot loader code and system low-level diagnostics code. Bootloader code is validated at system startup.

Internal SD Memory Card

The MX7 Tecton has one SD Memory card slot for Expansion Memory, located in the main battery well, and protected by a rubber flap. 1GB and 4GB flash memory cards are available from LXE.

Video Subsystem

The touchscreen is a 3.5” (8.9 cm) diagonal viewing area, ¼ VGA 320 by 240 pixel TFT Reflective Active Color LCD. Backlighting is available and can be turned on and off with key sequences. The turn-off timing is configured through the Start | Settings | System | Backlight icon. The display controller supports Microsoft CE 6.5 graphics modes.

A touchscreen allows mouse functions (tapping on the display or signature capture) using an LXE approved stylus. The touchscreen has an actuation force with finger less than 100 grams. The color display has an LED backlight and is optimized for indoor use.

The display appears black when the MX7 Tecton is in Suspend Mode.

Power Supply

The MX7 Tecton uses one of two batteries for operation.

- **Main Battery** A replaceable 2200 mAh Lithium-Ion (Li-Ion) battery pack. The battery pack recharges while in the MX7 Tecton when the device is connected to the optional external MX7 Tecton AC/DC power source. The main battery pack can be removed from the MX7 Tecton and inserted in the MX7T Multi- Charger which simultaneously charges up to five battery packs in four hours. The MX7 Tecton status indicator is illuminated when the Super-cap battery is being charged by the main battery pack. A new main battery pack can be fully charged in 6 hours when it is in an MX7 Tecton connected to AC power and 3.5 hours when it is in the MX7T multicharger.
- **Low temperature** Lithium-Ion (Li-Ion) batteries have a 1250 mAh capacity.
- **Super-capacitor (Super-cap).** No "backup battery" is used. Super-cap internal battery maintains RAM and other vital settings during a critical shutdown.

Note: An uninterrupted external power source (wall AC adapters) transfers power to the MX7 Tecton’s internal charging circuitry which, in turn, recharges the main battery and Super-cap battery. Frequent connection to an external power source, if feasible, is recommended to maintain main battery charge status as the Super-cap battery cannot be recharged by a dead or missing main battery.

COM Ports

The MX7 Tecton has one mini D 20-pin serial port (a multifunction I/O port) that can be configured by the user. It has a power input interface to allow powering the MX7 Tecton from an external source (AC/DC power supply or vehicle power). The power input interface range is 10 - 18VDC.

RS-232 Serial Port

Configured as COM1. Bi-directional full duplex and supports data rates up to 115 Kb/s. The port does not have RI or CD signals nor does it support 5V switchable power on pin 9 for tethered scanners. The serial port driver supports full duplex communications over the serial port. It supports data exchange via ActiveSync, but does not automatically start ActiveSync when connected. The Cable, Multipurpose RS-232 and Power and Adapter, RS-232 terminal port to D9 maleaccessories can be used with the RS-232 serial port. External AC power is available when the multipurpose RS-232/Power cable is connected. External AC power is not available for the *Adapter, RS-232 terminal port to D9 male* option. Power is drawn from the main battery pack when this adapter is connected..

USB Client Port

The MX7 Tecton has one USB Client port for ActiveSync applications. An accessory USB cable, Cable, Multipurpose USB and Power is available to connect the MX7 Tecton to a USB Type A plug on a PC for ActiveSync functions. External AC power is available when the multipurpose USB Client/Power cable is connected.

Audio Connection

An audio headset interface is available using the Adapter, Audio accessory with the I/O port. The connection cable connects the MX7 Tecton to a Voxware quick disconnect 4-pin interface. This cable adapts to specific styles of headsets for voice input, stereo or mono output. The MX7 Tecton with a Summit Client supports mono only. A 3-wire connector with (at a minimum) connections for ground, microphone, and 1 speaker. Connecting the headset to the MX7 Tecton COM port turns off audio output to the MX7 Tectonspeaker on the front of the mobile device. All sounds previously directed to the speaker are redirected to the headphone, including beeps. Bias voltage for an electric condenser microphone is available. External AC power is not available for this option. Power is drawn from the main battery pack.

Audio Support

Speaker The speaker supplies audible verification signals normally used by the Window's CE operating system. The speaker is located on the front of the MX7 Tecton, above the MX7 Tecton logo. The mobile device emits a Sound Pressure Level (loudness) of at least 102 dB measured as follows:

- Frequency: 2650 + 100 Hz
- Distance: 10 cm on axis in front of Speaker opening in front of unit.
- Duration : Continuous 2650 Hz tone.

The default is 1 beep for a good scan and 2 beeps for a bad scan.

Volume Control. Volume control is managed by a Windows Mobile Settings panel, an API and the Orange-Scan up/ down arrow key sequence.

Voice. All Microsoft-supplied audio codecs are included in the OS image. The hardware codecs, the input and output analog voice circuitry and the system design are designed to support voice applications using a headset connected to the Adapter, Audio accessory cable and the MX7 Tecton I/O connector.

Card Slot

There is one user-accessible SD Flash card slot, located in the main battery well, and protected by a rubber flap. Program CAB files, MX7 Tecton utilities, wireless drivers, the registry and registry backup information are stored on the SD Flash card.

Scanner / Imager Port

The MX7 Tecton has one integrated barcode scanner/imager port. Only one scan engine is installed at a time. Scan engines are not "hot swappable". The MX7 Tecton may have one of three Symbol laser scan engines:

- Short Range Laser Scanner, 955I
- Low Power Scanner, 955E
- Multi-Range "LORAX" Laser, 1524ER

or a Hand Held Products 2D Area Imager, 5300.

Note: Low Power Scanner, 955E does not support aim mode. Any attempt to adjust the aiming beam using SE955 programming barcodes will fail. The Low Power scanner does not decode Codablock, Code93i, Matrix 2 of 5 or Telepen symbologies.

The integrated scan engine activates when the Scan button on the front of the MX7 Tecton is depressed or when the trigger on an installed trigger handle is depressed. A system applet (Start | Settings | System | Data Collection) is available to set scanner/imager options.

Functionality of the integrated scan engine driver is based on the decoder driver version installed in the MX7 Tecton. Functions may include audible tones on good scan (at the maximum db supported by the speaker), failed scan, LED indication of a scan in progress, among other functions. If enabled, a vibration device provides a tactile response on a good scan event.

Bluetooth LXEZ Pairing

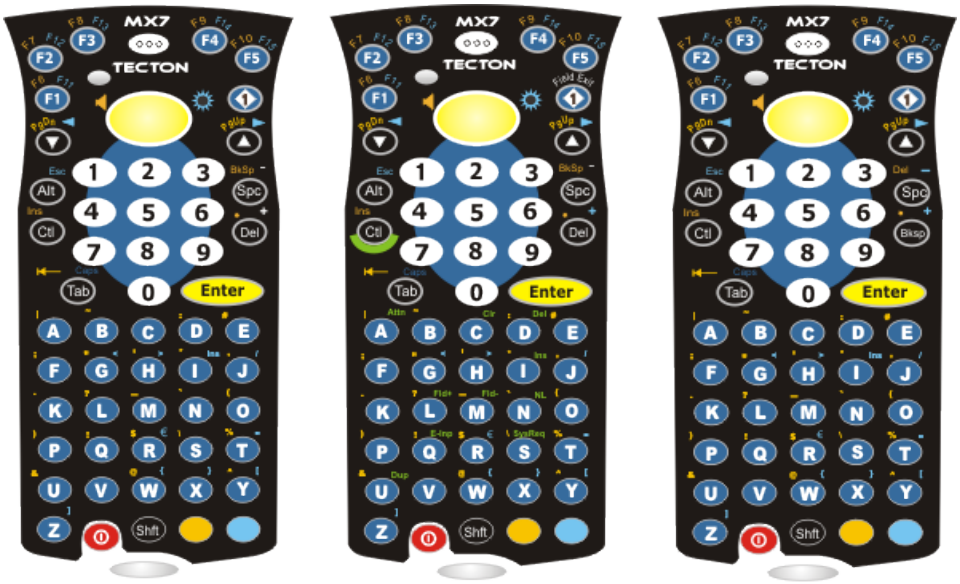
The MX7 Tecton contains Bluetooth version 2.1 with Enhanced Data Rate (EDR). Bluetooth device connection (or pairing) can occur at distances up to 32.8 ft (10 meters) Line of Sight. The wireless client retains network connectivity while Bluetooth is active.

The user will not be able to select PIN authentication or encryption on connections from the MX7 Tecton. However, the MX7 Tecton supports authentication requests from pairing devices. If a pairing device requests authentication or encryption, the MX7 Tecton displays a prompt for the PIN or passcode. Maximum encryption is 128 bit. Encryption is based on the length of the users passcode.

Bluetooth devices can be paired and managed using the **LXEZ Pairing** control panel.

- The MX7 Tecton does not have a Bluetooth managed LED.
- The LED on a mobile Bluetooth scanner illuminates during a scanning operation; the Scan LED on the MX7 Tecton does not illuminate.
- Barcode data captured by a mobile Bluetooth scanner is manipulated by the settings in the MX7 Tecton Data Collection panel.
- Multiple beeps may be heard during a barcode scan using the mobile Bluetooth scanner; beeps from the mobile Bluetooth scanner as the barcode data is accepted/rejected, and other beeps from the MX7 Tecton during final barcode data manipulation.

Keypads

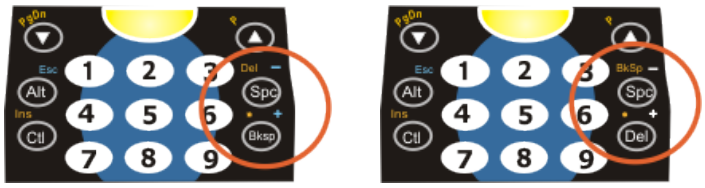


ANSI Primary Delete | 5250 Primary Delete | ANSI Primary Backspace

Using the 55 Key Alpha-Numeric Keypad

There are three options available for the 55 key keypad:

1. ANSI Primary Delete
2. 5250 Primary Delete. 5250 commands are displayed on the keypad overlay next to the affected keys.
3. ANSI Primary Backspace. This keypad resembles the ANSI Primary Delete keypad with the exception that the Del key function on the ANSI Primary Delete keypad is replaced by the BkSp key function.



- When using a sequence of keys that includes a sticky key, press the sticky key first, release it, then press the rest of the key sequence.
- When using a sequence of keys that includes the Orange or Blue keys, press the color key first then the rest of the key sequence.
- Alphabetic keys default to lower case letters. Press the Shft key, then the alphabetic key for an uppercase letter.
- When the computer boots, the default condition of Caps (or CapsLock) is Off. The Caps (or CapsLock) condition can be toggled with Blue plus Tab key sequence.

Using the 32 Key Numeric with Triple-Click Alpha

- When using a sequence of keys that require an alpha key, first press the Alph key. Use the Shft sticky key or the Caps key sequence (Blue+Tab) for upper case alphabetic characters.
- Pressing the Alph key forces “Alpha” mode for the 2,3,4,5,6,7,8, and 9 keys. The 1 and 0 keys continue to place a 1 and 0 into the text field.
- To create a combination of numbers and letters before pressing Enter, remember to tap the Alph key to toggle between Alpha and Numeric mode.
- When using a sequence of keys that do not include the Alph key but does include a sticky key, press the sticky key first then the rest of the key sequence.

Display

The touchscreen display is an active color LCD unit capable of supporting VGA graphics modes. Display size is 240 x 320 pixels in portrait orientation. The covering is designed to resist stains. The touchscreen allows signature capture and touch input. A pen stylus is included. The touchscreen responds to an actuation force (touch) of 4 oz. of pressure (or greater). The color display is optimized for indoor lighting. The display is black when the device is in Suspend Mode or when both batteries have expired and the unit is Off.

Display Backlight Timer

When the Backlight timer expires the display backlight is turned off. The default value for the battery power timer is 30 seconds. The default value for the external power timer is 1 minute.

The backlight timer dims the backlight on the touchscreen at the end of the specified time.

When the display wakes up, the Backlight timer begins the countdown again.

The keypad backlight can be synchronized with the display backlight activity.

Status LEDs

- The MX7 Tecton does not have a Bluetooth managed LED. Any Bluetooth activity indicators are located in the Desktop taskbar.
- System Status LED is located at the top left of the keypad, above the Scan button.
- The Scan Status LED is located below the keypad.
- The Alpha Mode LED is located below the F4 key on the 32-key keypad (Numeric-Alpha keypad).

LED	Color - Activity	Indicates ...
System Status	Red - Blinking	Power fail. Replace the main battery with a fully charged main battery. Or Connect the MX7 Tecton to external AC power then replace the depleted main battery with a fully charged main battery.
	Red - Steady	Main Battery Low. If the main battery is not replaced with a fully charged battery before the main battery fails, the MX7 Tecton is turned Off.
	Green - Blinking	Display Off. No user intervention required.
	No Color	MX7 Tecton is either full on - with the display on (backlights may be dimmed when the status LED has no color) or in Suspend - with the display off.
Scan Status	Green - Steady	Good scan.
	Red – Steady	Scan in progress.
	No color	Scanner / Imager ready for use.
	Amber - Steady	Barcode decoder engine storing changed parameters.
Alpha Mode (Alph LED)	Green - Steady	MX7 Tecton 32-key is in Alpha character input mode.
	No color	MX7 Tecton 32-key is in Numeric key input mode.

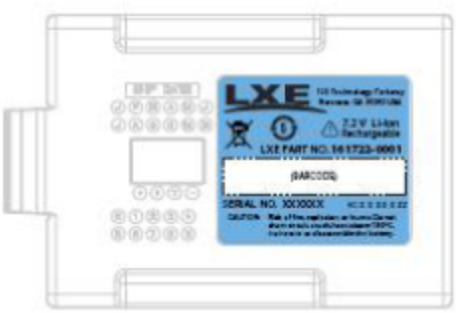
MX7 Tecton Cold Storage Configuration

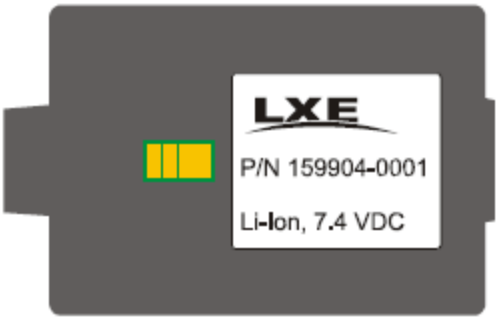
Highlights

- MX7 Tecton 1250mAh Cold Storage battery has a blue label.
- Snowflake decal above the keypad.
- Heating element visible on the touchscreen and the scanner aperture.
- Cold storage battery is recharged in the MX7T Battery Charger, MX7T Desk Cradle and when in an MX7 Tecton attached to an external power source (e.g. AC adapter).

The Cold Storage version is designed to operate normally when reading barcodes and moving from, and into, cold storage warehouses, freezers and vehicles where the temperatures may vary between -30°C and 5°C (-22°F and 41°F).

Cold Storage Battery





Cold Storage Battery Label **Standard MX7T Battery Label**

There is no change in the way the Cold Storage battery is inserted into and removed from the MX7 Tecton battery well. See the section in the MX7 Tecton User Guide titled *Inserting Fully Charged Battery* for instruction.

Cold Storage Battery Life – minimum 2.5 hours while the unit is roaming, powered on with ambient temperature -10°C (14°F) or above, Display backlight turned on, Keypad LED backlight on, radio connected to Access Point, and scanner decoding barcodes. The LXE Li-Ion main battery (MX7A381BATT / MX7393BATT) has been designed specifically for the Cold Storage device. This 1250mAh battery has a blue label while the standard MX7 Tecton 2200mAh battery has a white (MX7A380BATT / MX7392BATT) label.

Snowflake Decal

A Cold Storage device has a snowflake decal between the touchscreen and the keypad. The decal is located to the left when the mobile device screen is facing forward. Due to the heating elements overlaying the scan aperture, barcode scanning may require the user to move the scan aperture closer to the barcode for good scan results.

Heating Elements

Heating elements activate when ambient temperature drops below 0°C (32°F). LXE recommends using the stylus when performing screen touch functions. There may be some condensation as the Cold Storage device moves in and out of cold storage areas. The condensation on the touchscreen and the scan aperture quickly dissipates.

The touchscreen heating elements and scanner aperture heating elements may be visible when the Cold Storage device is tilted slightly. No user interaction is required to turn the heating elements on/off. Stylus taps on the touchscreen function normally.

Recharging Batteries

The Cold Storage battery pack can be recharged to full capacity while in a Cold Storage device connected to an external power source and also while the Cold Storage battery pack is inserted in the charging bay in a powered MX7T desk cradle. The battery pack temperature must be above 10°C (50°F) before re-charging can begin.

Battery packs in the MX7T Battery Charger begin charging when the battery pack temperature is between 10°C (50°F) and 40°C (100°F).

To charge the Cold Storage battery pack to full capacity, the MX7T Battery Charger firmware must be at V1.07 or greater. The firmware version is noted on the battery charger label on the bottom of the device.

Contact your LXE representative if your MX7 Tecton battery charger firmware needs to be upgraded.

The Battery Charger and AC adapter are not designed to operate in a freezer or cold storage environment. Please refer to the MX7T Battery Charger Guide for instruction and technical information.

Hot-swapping the Cold Storage Battery

The Cold Storage mobile device, with a fully charged internal battery, retains data during a main battery hot-swap at -30°C (-22°F) for at least 90 seconds. The temperature of the fully charged replacement Cold Storage main battery must be +10°C (14°F), or above.

Normal Operation Temperature Ranges

- In the freezer where the temperature ranges between –30°C to -18°C (-22°F to 0°F).
- In the loading dock where temperature ranges between 0°C to 5°C (32°F to 41°F) with the relative humidity at 65%
- Moving between the freezer and a loading/unloading area where the temperature transitions from -30°C to 5°C (-22°F to 41°F).

Power

Power Modes

On Mode

The Display

When the display is On:

- the keypad, touchscreen and all peripherals function normally
- the display backlight and keypad backlight are on until the Backlight timer expires

The MX7 Tecton

After a new MX7 Tecton has been received, a charged main battery inserted, and the Power key tapped, the MX7 Tecton is always On until both batteries are drained completely of power.

When the main battery and Super-cap battery are drained completely, the unit is in the Off mode. The unit transitions from the Off mode to the On mode when a charged main battery is inserted or external power is applied and the Power key is pressed.

Suspend Mode

The Suspend mode is entered when the unit is inactive for a predetermined period of time or the user taps the Power key. MX7 Tecton Suspend timers are set using Start | Settings | Power | Advanced tab.

Wake-up Events - all configurable via an LXE Power Management API call:

- Any key on the keypad
- Stylus touch on the touchscreen
- Handle trigger press
- Connecting to AC adapter
- Power button tap
- USB connection
- COM port control CTS
- Real time clock
- Bluetooth device reconnect / disconnect message

When the MX7 Tecton wakes up, the Display Backlight and the Power Off timers begin the countdown again. When any one of the above events occurs prior to the Power Off timer expiring, the timer starts the countdown again. The MX7 Tecton does not need to be placed in Suspend mode before hotswapping the main battery.

Off Mode

The unit is in Off Mode when the main battery and the Super-cap battery are depleted. Insert a fully charged main battery and press the Power key to turn the MX7 Tecton On.

Batteries

The MX7 Tecton is designed to work with a Lithium-Ion (Li-ion) battery from LXE. Under normal conditions it should last approximately eight to ten hours before requiring a recharge. The more you use the scanner or the wireless transmitter, the shorter the time required between battery recharges.

A suspended MX7 Tecton maintains settings for a minimum of two days using a main battery that has reached the Low Warning point and a fully charged Super-cap internal battery. The MX7 Tecton retains data, during a main battery hot swap, for at least 5 minutes.

Note: New main battery packs must be charged prior to use. This process takes up to four hours in an MX7 Tecton Battery Charger and six hours when the MX7 Tecton is connected to external power.

Checking Battery Status

Tap the **Start | Settings | System | Battery**. Battery voltage level, status and power remaining is displayed.

Note: When the Battery control panel is displayed power management is disabled, meaning the backlights and display will not turn off nor will the unit suspend, after the configured inactivity times expire.

Main Battery Pack

The main battery pack has a rugged plastic enclosure that is designed to withstand the ordinary rigors of an industrial environment. Exercise care when transporting the battery pack making sure it does not come in contact with excessive heat or any power source other than the MX7 Tecton Multi-Charger or the MX7 Tecton unit.

When the main battery pack is properly installed in the unit it provides up to eight hours of operation depending upon use and accessories installed. The battery pack is resistant to impact damage and falls of up to four feet to a concrete surface. Under normal conditions it should last approximately eight hours before requiring a recharge. The more you use the scanner or the wireless transmitter, the shorter the time required between battery recharges.

Battery Hotswapping

Important: When the internal battery power is Low or Very Low (**Start | Settings | Power**) connect the AC adapter to the MX7 Tecton before replacing the main battery pack.

When the main battery power level is low, the MX7 Tecton will signal the user with the low battery warning indicator (the Status LED remains a steady red) that continues until the main battery is replaced, the battery completely depletes, or external power is applied to the MX7 Tecton using an AC Adapter.

You can replace the main battery by first placing the MX7 Tecton in Suspend Mode then removing the discharged main battery and installing a charged main battery within a five minute time limit (or before the Super-cap internal battery depletes). When the main battery is removed the MX7 Tecton enters Critical Suspend state; the MX7 Tecton remains in Suspend mode, the display is turned off and the internal battery continues to power the unit for at least five minutes.

Though data is retained, the MX7 Tecton cannot be used until a charged main battery is installed. After installing the new battery, press the Power key. Full operational recovery from Suspend can take several seconds while the client is reestablishing a network link. If the internal battery depletes before a fully charged main battery can be inserted, the MX7 Tecton will turn Off.

Low Battery Warning

It is recommended that the main battery pack be removed and replaced when its energy depletes. When the main battery Low Battery Warning appears (the Status LED remains a steady red) perform an orderly shut down, minimizing the operation of any installed devices and insuring any information is saved that should be saved.

Super-cap Internal Battery

The MX7 Tecton has an internal battery that is designed to provide limited-duration electrical power in the event of main battery failure. The energy needed to maintain the internal battery near full charge at all times is drawn from the MX7 Tecton main battery. It takes 5 minutes or less to fully charge the internal battery. The duration of internal battery life is dependent upon operation of the MX7 Tecton, its features and any operating applications. The internal battery has a minimum service life of two years. The Super-cap internal battery is replaced by LXE.

Handling Batteries Safely

- Never dispose of a battery in a fire. This may cause an explosion.
- Do not replace individual cells in a battery pack.
- Do not attempt to pry open the battery pack shell.
- Be careful when handling any battery. If a battery is broken or shows signs of leakage do not attempt to charge it. Dispose of it using proper procedures.

Caution

Nickel-based cells contain a chemical solution which burns skin, eyes, etc. Leakage from cells is the only possible way for such exposure to occur. In this event, rinse the affected area thoroughly with water. If the solution contacts the eyes, get immediate medical attention.

NiMH and Li-Ion batteries are capable of delivering high currents when accidentally shorted. Accidental shorting can occur when contact is made with jewelry, metal surfaces, conductive tools, etc., making the objects very hot. Never place a battery in a pocket or case with keys, coins, or other metal objects.

Software

Introduction - Operating System

There are several different aspects to the setup and configuration of the MX7 Tecton. Many of the setup and configuration settings are dependent upon the optional features such as hardware and software installed on the mobile device. The examples found in this section are to be used as examples only, because the configuration of your specific MX7 Tecton may vary. The following sections provide a general reference for the configuration of the MX7 Tecton and some of its optional features.

Note: LXE recommends frequently charging the MX7 Tecton battery using an external power source to ensure continuous charging of the internal Super-cap battery.

Windows Mobile

Note: For general use instruction, please refer to commercially available Windows Mobile user's guides or the Windows Mobile on-line Help application installed with the MX7 Tecton

This section's contents assumes the system administrator is familiar with Microsoft Windows options and capabilities loaded on most standard Windows XP or later desktop computers.

Therefore, the sections that follow describe only those Windows capabilities that are unique to the MX7 Tecton and its Windows Mobile environment.

Notes

Based on your installed software version and hardware options, your setup may not be exactly the same as those that are described in this guide. Contact your LXE representative for information on the latest upgrades for your MX7 Tecton.

Installed Software

Note: Some options require an external modem connection. Modems are not available from LXE nor supported by LXE.

When you order an MX7 Tecton you receive the software files required by the separate programs needed for operation and wireless client communication. The files are loaded by LXE and stored in folders in the mobile device.

This section lists the contents of the folders and the general function of the files. Files installed in each MX7 Tecton are specific to the intended function of the MX7 Tecton.

Files installed in LXE mobile devices that are configured for a wireless environment usually contain a radio specific driver – the driver for the radio is specific to the manufacturer of the radio installed in the wireless host environment and is not interchangeable.

Software Load

The software loaded on the MX7 Tecton computer consists of Windows Mobile Operating System, hardware-specific OEM Adaptation Layer, device drivers, Internet Explorer for Windows Mobile browser and MX7 Tecton-specific utilities. The software supported by the MX7 Tecton is summarized below:

Operating System

Full Operating System License: Includes all operating system components, including Windows Mobile kernel, file system, communications, connectivity (for remote APIs), device drivers, events and messaging, graphics, keyboard and touchscreen input, window management, and common controls.

Network and Device Drivers

Bluetooth (Option)

LXE AppLock (Option)

RFTerm (VT220, TN5250, TN3270) Terminal Emulation (Option).

LXE API Routines

Note: Contact your LXE representative to get access to CAB files as they are released by LXE.

Software Backup

Application programs and data that are normally RAM resident are backed up via ActiveSync.

Version Control

Version numbers are applied to the boot loader and the OS image independently. The version information stored consists of the LXE build number, plus the date and time of compile (in lieu of a build number). These version numbers are stored in non-volatile storage, where the user cannot inadvertently modify them. A Settings panel and API are provided so the user can reference the version numbers for support purposes.

The MX7 Tecton has a unique 128-bit ID code as required by the Windows Mobile specification. This ID number is generated by the boot loader. This ID code is available in the About LXE settings panel, and via a Win32 standard API.

In addition, an API is provided to return a standard LXE copyright string, so that applications may reference this to be sure they are running on an LXE mobile device for licensing purposes.

Boot Loader

The MX7 Tecton supports a proprietary boot loader. It is the responsibility of the boot loader to:

- Initialize all system hardware
- Initiate OS startup
- Handle wakeup from system suspend, loading saved state

The MX7 Tecton starts the OS every time during suspend/resume or cold boot.

Startup Folders and Launch Sequences

The MX7 Tecton operating system uses two startup folders:

- User applications placed in the Windows\Startup folder automatically run during a reboot. They are deleted upon a clean boot.
- User applications placed in the System folder automatically run during a reboot.

Today Screen

For general use instruction, please refer to commercially available Windows Mobile user guides or the Windows Mobile on-line Help on the MX7 Tecton.

Note: Whenever possible, use the AC power adapter with the MX7 Tecton to conserve the main battery and to ensure the internal battery is charged.

The main screen for the MX7 Tecton is known as the Today screen. The Today screen shows various options and status icons. The Today screen appearance is configurable by selecting Start | Settings | Today. Both the appearance of the Today screen and the items displayed may be configured.

1. Start menu
2. Configurable Today screen listing
3. Notification Bar
4. Status icons
5. Soft Keys

Today Screen Components

Start Menu

The Start menu consists of applications and folders.

- Selecting an application from the menu starts that application.
- Selecting a folder opens a window displaying the contents of the folder.
- Selecting Settings displays the Settings panels by category.
- Selecting Help displays context sensitive help. The contents displayed in the help window vary depending on the screen displayed before Help was accessed.

Programs not appearing on the Start menu can be accessed by using the File Explorer.

Configurable Today Screen Listing

The items displayed in the Today screen listing can be configured from Start | Settings | Today | Items.

For more information, please see Today settings later in this section.

Date

When the Date is enabled to display on the Today screen, the date is displayed on the left side of the screen and the time is displayed on the right side. If there are any alarms set, a bell icon is displayed under the current time.

For more information, please see the Clock & Alarm settings section.

Device Unlocked / Device Locked

When the MX7 Tecton is unlocked, tapping on **Device unlocked** locks the MX7 Tecton.

When the MX7 Tecton is locked, tapping on **Unlock** at the bottom of the screen unlocks the MX7 Tecton. Depending on the settings, a password may be required. The MX7 Tecton can also be configured to lock after a period of inactivity. For more information, please see the Lock settings.

Notification Bar

The Notification Bar is displayed at the top of the Today screen. The notification bar remains visible even when other screens are selected, though the icons displayed may vary.

When the Notification bar is displayed on other screens there may be an X (close the current screen/program) or an ok (accept the current input and close the screen).

Category	Icon	Meaning
Network		The Windows Mobile Wireless Manager is managing the wireless connection and the MX7 Tecton is connected to a wireless network.
Network		A wireless manager is managing the wireless connection.
Network		A wireless manager is managing the wireless connection and has detected one or more wireless networks in range.
Network		A wireless manager is managing the wireless connection and has not detected a wireless network in range.
Volume		The speaker is on.
Volume		The speaker is off.
Volume		Vibrate is on.
Power		The MX7 Tecton is connected to external power.
Power		The MX7 Tecton is operating on battery power. The strength of the battery is indicated by the number of bars displayed: 0 (low battery) to 4 (fully charged battery).

Status Icons

Additional icons may be displayed at the lower edge of the Today screen.

Note: Summit signal strength icons are displayed only when the Summit Client Utility is controlling the radio.

	Bluetooth module is connected to one or more of the targeted Bluetooth device(s).
	MX7 Tecton is not connected to any Bluetooth device. MX7 Tecton is ready to connect with any Bluetooth device. MX7 Tecton is out of range of all paired Bluetooth device(s). Connection is inactive.
	Summit radio is not currently associated or authenticated to an Access Point.
	The signal strength for the currently associated/authenticated Access Point is less than -90 dBm
	The signal strength for the currently associated/authenticated Access Point is -71 dBm to -90 dBm
	The signal strength for the currently associated/authenticated Access Point is -51 dBm to -70 dBm
	The signal strength for the currently associated/authenticated Access Point is greater than -50 dBm

More information on Bluetooth can be found in the Bluetooth settings section.

Soft Keys

Soft Keys are displayed at the bottom of the Today screen. The keys displayed vary by the active screen/application.

The soft keys generally provide menus for the selected application. By default, on the Today screen, the left Soft Key (Calendar) can also be accessed by pressing F1 and the right Soft Key (Contacts) can be accessed by pressing F2. The assignments for the Soft Keys can be edited by selecting Start | Settings | Personal | Buttons.

Installed Programs

Additional information on installed programs is listed below.

Internet Explorer Mobile

Start | Internet Explorer Mobile

This browser is a subset of and is compatible with IE 7.0 (as might be installed on a desktop PC). Internet Explorer Mobile has two viewing modes: Reading mode and Overview mode.

For information on general configuration options, please see the Windows Mobile help system on the MX7 Tecton or other commercially available Internet Explorer configuration resources. Tap the IE Menu soft key (on the lower right) and select Tools | Options to set up the default home page, view browsing history, setup privacy and security, preferred language, and Other options.

If an Internet Explorer webpage is larger than the MX7 Tecton screen can display at one time, use touch screen gestures for horizontal and vertical scrolling.

For information on the version of Internet Explorer loaded on the MX7 Tecton, tap the Favorites soft key and select About Internet Explorer.

Office Mobile Applications

Start | Office Mobile

Office 2003 and Office 2007 formats are supported, though these are subset applications so not all objects may appear as expected.

ActiveSync handles all file format conversions for these files transferred between the MX7 Tecton and the host PC.

ActiveSync

Start | ActiveSync

ActiveSync can be setup to synchronize with an Exchange server. Contact your system administrator for configuration information.

AppLock (Option)

Start | Settings | System | Administration

The AppLock program is accessed by the user or the AppLock Administrator at bootup or upon completion of a cold boot. Set parameters using the Administration option in the Settings Panel.

Summit

SCU (Summit Client Utility)

Start | Summit

Summit automatically installs and runs after every cold boot. See Wireless Network Configuration for Summit Client Utility setup information and instruction.

Certs

Start | Summit | Certs

Contents of README.TXT file located in Start | Summit | Certs menu option:

> This directory is the default directory for digital certificates and protected access credentials (PACs) used in conjunction with Extensible Authentication Protocol (EAP) types.
>
> When you use PEAP or EAP-TLS, you must provision a certificate authority (CA) certificate for the EAP authentication server and distribute that certificate to every client device. On the device, you can store the certificate in the Microsoft certificate store or in the directory with the path specified as the value for Certs Path on the Summit Client Utility (SCU) Global tab. When you don't specify a Certs Path value, SCU uses the path to this directory for the Certs Path value.
>
> When you enter a CA certificate name on a SCU Credentials page, you enter only the filename and extension, not the path. The Certs Path global setting provides the path.
>
> If you import CA certificates into the Microsoft certificate store and want to use them in the SCU, select "Use MS store" on the Credentials page. When using the Microsoft certificate store, SCU ignores the Certs Path global setting and the value specified in the CA Cert filename field on the Credentials window.
>
> User (not CA) certificates for EAP-TLS must be selected from the Microsoft certificate store.
>
> When you use EAP-FAST, you must create a PAC for each client device. When you create a PAC manually, you must store it in the directory identified by the Certs Path global setting.

See Wireless Network Configuration for directions for acquiring CA and user certificate files.

Windows Media

Start | Windows Media

Codecs are included for WMA, WMV, MP3 and WAV files.

Bluetooth (Optional)

Start | Settings | System | Bluetooth

Only installed on a Bluetooth equipped MX7 Tecton. The System Administrator can Discover and Pair targeted Bluetooth devices for each MX7 Tecton. The System Administrator can enable / disable Bluetooth settings and assign a Computer Friendly Name for each MX7 Tecton. Bluetooth can be accessed by tapping Start | Settings | System | Bluetooth, or by tapping the Bluetooth icon on the Today screen.

LXE RFTerm (Optional)

Start | RFTerm

Installed by LXE. The application can be accessed by tapping **Start | RFTerm**.

Refer to the *RFTerm Reference Guide* for complete information and instruction. WAV files added by the user should be stored in System\LXE\RFTerm\Sounds.

Status Popup

Start | Settings | System | MX7 Tecton Options

The Status Popup provides real time information on several status icons when a specified keypress occurs.

To use the Status Popup, first map a key to the status window. Use the Buttons panel (Start | Settings | Personal | Buttons) to assign a key to Admin Statpop (for the Admin Popup) and StatPopup (for the User Popup). LXE recommends using a Diamond key for the popup. If a Function key is used, that Function key is not available to other applications such as RFTerm.

Use the MX7 Tecton Options panel (Start | Settings | System | MX7 Tecton Options) to configure other parameters including:

- Dismiss Status Popup on 5 second timeout
- Information to include in Admin or User Status Popup.

The Status Popup can be dismissed by the expiration of the timeout (if enabled), tapping the status window or pressing the key assigned to the popup.

For more information, please refer to the Buttons and MX7 Tecton Options settings.

LXEConnect

LXEConnect allows a user with an ActiveSync connection between a PC and the MX7 Tecton to display the MX7 Tecton screen on the host PC. Any keystrokes on the host PC are passed to the MX7 Tecton as if they were keystrokes on the MX7 Tecton keypad.

LXEConnect for the MX7 Tecton is available on the *Getting Started Disc*.

GrabTime

GrabTime is a utility to synchronize the MX7 Tecton with a world-wide time server. GrabTime can be started as a service by setting it in the Launch option (see the following section for details on Launch).

Synchronize with a local time server

- Use ActiveSync to copy GrabTime.ini from the My Device | Windows folder on the MX7 Tecton to the host PC.
- Edit GrabTime.ini (on the host PC) to add the local time server's domain name to the beginning of the list of servers. You can then optionally delete the remainder of the list.
- Copy the modified GrabTime.ini to the My Device | Windows folder on the MX7 Tecton.

Enhanced Launch

Launch is a utility that runs automatically at startup. A partial list of Enhanced Launch functions includes:

- Launch a .CAB file
- Run an .EXE or .BAT file
- Process a .REG file
- Manipulate files and directories
- Modify registry keys
- Perform conditional operations

Note: The Enhanced Launch utility does not interact with or affect the AppLock Launch command.

For a complete list of Launch functions including commands and command structure, please see Launch Utility.

MX7 Tecton OS Upgrade

Introduction

Depending on the size of the operating system, the total time required for a successful upgrade may require several minutes.

The OS upgrade files are unique to your MX7 Tecton physical configuration and date of manufacture. OS upgrade files designed for one device configuration should not be used on a different device configuration.

OS and Language Options

The MX7 Tecton running Windows Mobile must be returned to the manufacturer, LXE, if the device is to be re-imaged with any other Windows operating system (for example, Windows CE 6).

Same Language to Same Language	During the upgrade process all settings revert to factory defaults. Parameters will need to be changed from factory defaults to your preferred values at the conclusion of the upgrade process.
Change Language during Upgrade Process	When changing from one language to another during the upgrade process, all files in the System folder will be deleted as the system is re-partitioned and all system settings are cleared. Parameters will need to be changed from factory defaults to your preferred values at the conclusion of the upgrade process.

Preparation

- Please Contact your LXE representative to get the **OS upgrade files** from LXE.
- LXE recommends that removal or installation of the SD Flash card be performed on a clean, well-lit surface.
- Always perform MX7 Tecton updates when it has a fully charged main battery and/or a dependable external power source connected to the MX7 Tecton.

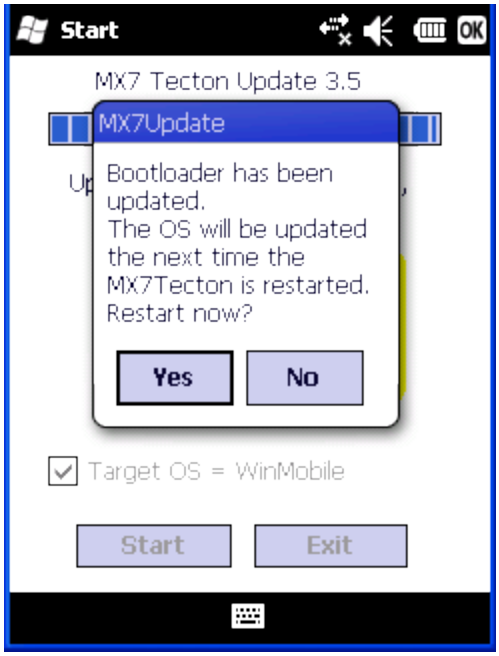
Procedure

Place the new image files and MX7Update on a SD card.

Place the MX7 Tecton in Suspend Mode and remove the main battery pack.

Lift the rubber barrier and slide the SD card out of the slot. Do not remove the rubber barrier. The MX7 Tecton may not have a SD card in the slot because the OS is in flash.

1. Place the card with the new image files on it into the SD slot. The label on the SD card should be facing up.
2. Launch MX7UPDATE.EXE in My Device | Storage Card.
3. Verify the desired checkboxes are checked and the unwanted checkboxes are **not** checked
4. **Important**: If a failure occurs during the update, DO NOT RESTART (or coldboot). Follow the instructions on the screen to Exit the update utility then restart the update utility.
5. Tap Start to start the update. The checkboxes are dimmed when the Update is processing. Do not touch the device until the install/update is complete.



When the bootloader process is complete, tap the Yes button to complete the update process. Tap the No button to restart later.

When the process is finished (MX7 Tecton has restarted), remove the SD card, replace the rubber barrier and replace the main battery. Turn the MX7 Tecton on.

Check the OS update version by viewing the **About** or **About LXE** Settings panel.

Note: If the application displays "Update OS Image Failed" or "Update Boot Loader Image Failed", do not Restart the system manually. Perform a warm boot, then try the upgrade again. Restarting will cause a system crash, since there is no valid image in the MX7 Tecton system.

Battery State and OS Upgrade

LXE recommends a fully charged main battery be installed in the MX7 Tecton prior to upgrading the operating system. A prompt may appear when the battery reaches Critical Low that informs the user there is not enough power in the main battery to perform the upgrade.

The operating system will not be able to execute the OS upgrade when the battery level is too low (25% or less), as there is a high risk that the power remaining in the battery expires when executing the upgrade and the MX7 Tecton will be left in an inoperable state.

When main battery power level is too low, connect external power to the MX7 Tecton before performing the upgrade procedure. Do not disconnect external power before the upgrade process is complete.

The MX7 Tecton running Windows Mobile must be returned to LXE if the device is to be imaged with any other Windows operating system (for example, Windows CE).

Troubleshooting

The powered device won't boot up after the upgrade is finished.

Send the MX7 Tecton to LXE Service and Support for re-imaging.

Start Menu Options

The following options represent the **factory default program installation**. Your system may be different based on the software and hardware options purchased.

Use the up and down arrow keys on the MX7 Tecton to quickly scroll through the icons,

or,

using screen touch gestures, brush the window up or down with a finger or the stylus.

Icon	Function
	Basic ActiveSync configuration, including synchronization with an Exchange server.
	Calculator
	Calendar/date book application. Can be synchronized with PC Outlook calendar using ActiveSync.
	Contacts. Address book application. Can be synchronized with PC Outlook address book using ActiveSync.
	Email application. Can be synchronized with PC Outlook email using ActiveSync or it can synchronize with an Exchange server.
	File Explorer. Displays a structured picture of files on the system.
	Help. Access Windows Mobile help system on the MX7 Tecton. Options to search using Windows Live Search are available.
	Internet Explorer. Access web pages on the Internet.
	Internet Sharing. Setup PC Connection and Network Connection.
	Windows Live Messenger. Instant Messaging service. Internet access required.
	Notes. Notebook application. Select Menu | View Recording Toolbar to create an audio note. Can be synchronized with PC Outlook notes using ActiveSync.

Icon	Function
	Office Mobile. Access to Excel, PowerPoint, Word and OneNote. Compatible with Microsoft Office 2007.
	Pictures and Video. Picture/video viewer application. Can be synchronized with PC My Documents folder using ActiveSync.
	Remote Desktop Mobile. Display remote desktop. Setup for computer, user name, password and domain required. Use Options to setup connected options for the remote desktop.
	Settings. Access to system level setup programs: Connections, Personal, and System among others.
	Task Manager. View and cancel running tasks.
	Tasks. Task list application. Can be synchronized with PC Outlook task list using ActiveSync.
	Text. Opens Messaging window. Requires an email application. Can be synchronized with PC Outlook email using ActiveSync or it can synchronize with an Exchange server.
	Today. Configure the appearance and the items to display on the Today screen.
	Windows Live. Sign in to Microsoft Windows Live online service. Internet access required.
	Windows Media. Audio visual management program. Not supported on the MX7 Tecton.

Office Mobile

Icon	Function
	Excel Mobile. Spreadsheets can be edited, data can be sorted, formatting and changes are preserved.
	PowerPoint Mobile. Open, view and edit slides in landscape or portrait format. Zoom and GoTo features enabled.
	Word Mobile. Open, view, edit documents. Formats are saved. Spelling checker, cut and paste are available, undo and redo commands.
	OneNote Mobile.
	Note: Tap Start | Help for context sensitive Windows Mobile Help when changing or viewing options. Tap the X icon in the top right corner to close Windows Mobile Help.

Settings

Start | Settings

Note: Tap Start | Help for context sensitive Windows Mobile Help when changing or viewing options. Tap the X icon in the top right corner to close Windows Mobile Help.

Icon	Function
	Bluetooth. Set the parameters for Bluetooth device connections.
	Clock & Alarms. Set Date, Time, Time Zone, and alarms.
	Lock. Set password protection.
	Power. Review battery status. Set time limit before device is turned off.
	Sounds & Notifications. Enable / disable sounds and vibrations. Set volume parameters and assign sound (wav) files to OS events.
	Today. Configure the Today screen.
	Connections. Set up various connections between a host and the MX7 Tecton.
	Personal. Configure Buttons, Input method and Owner information.
	System. Review system information. Set up operating system and equipment parameters.

Personal

Start | Settings | Personal

Icon	Option
	About LXE. View software, hardware, versions and network IP. No user intervention required.
	Buttons. Set functions of programmable buttons.
	Input. Set input options for keypad, touchscreen and voice.
	Owner Information. Set the mobile device owner details (name, phone, etc). Enter notes. Enable / disable Owner display parameters.

System

Start | Settings | System

Icon	Option
	About. Display OS version information. Set device name.
	Backlight. Set the display backlight brightness and display/keypad backlight timeout. Configure the timeout based on type of power source: battery or external power.
	Battery. View voltage and status of the main battery.
	Certificates. Manage digital certificates used for secure communication.
	Customer Feedback. Enable or disable automatic feedback to Microsoft Corporation.
	Data Collection. Wedge utility for data collected from barcode scans. Set data collection device, notifications, data stripping, prefix/suffix, and vibration (if installed) options. Assign baud rate, parity, stop bits and data bits for COM1 port. Assign collected data manipulation parameters.

Icon	Option
	Encryption. Enable file encryption on removable storage cards.
	External GPS. Configure serial GPS access.
	License Manager. View license information for installed licensed applications.
	Managed Programs. View install history for .NET programs.
	Memory. Display current state of virtual memory.
	Mixer. Adjust the input and output parameters – volume, side-tone, and record gain, for headphone, software and microphone.
	MX7 Tecton Options. Set various device specific configuration options.
	Peripherals. Enable or disable touch screen heater and scanner window heater, if installed. Set the heater trip point in degrees C.
	Regional Settings. Set appearance of numbers, currency, time and date based on country region and language settings.
	Registry. Load User Defaults, Save User Defaults, Load Factory Defaults, and Warmboot.
	Remove Programs. Remove user installed programs.
	Screen. Calibrate touch screen, adjust text options.
	Task Manager. Display running tasks. Cancel running tasks.

Icon	Option
	Wi-Fi. Set the parameters for a Summit client.

Connections

Start | Settings | Connections

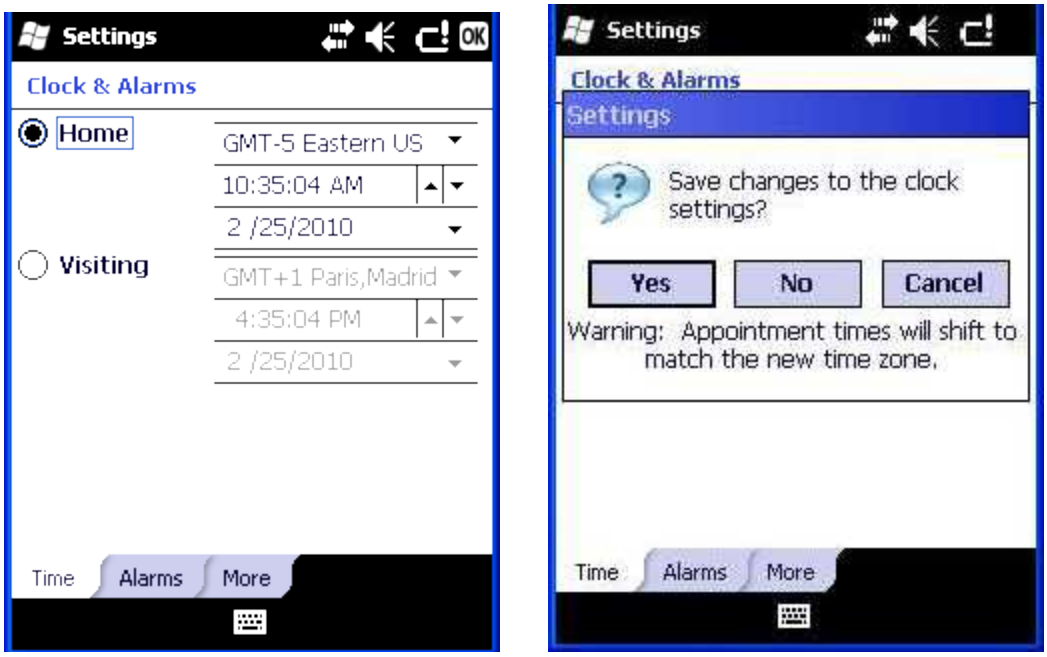
Icon	Option
	Beam. Enable receiving InfraRed and Bluetooth beams. (Not supported on the MX7 Tecton.)
	Connections. Configure connections to servers.
	Domain Enroll. Enroll in Active Directory domain.
	Network Cards. Set the parameters for a wireless network using the utility included in Windows Mobile.
	USB to PC. Set up an ActiveSync connection between a host PC and the MX7 Tecton.

Settings Panels

Clock & Alarms

Start | Settings | Clock & Alarms

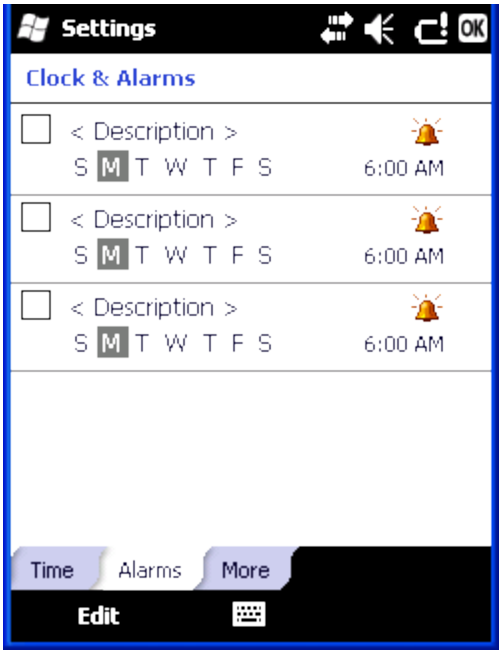
Time



Clock & Alarms Settings – Time Panel

Adjust the settings and tap ok to save the changes. Select Yes on the popup box and the changes take effect immediately. The Time can be set for both a Home and a Visiting location.

Alarms

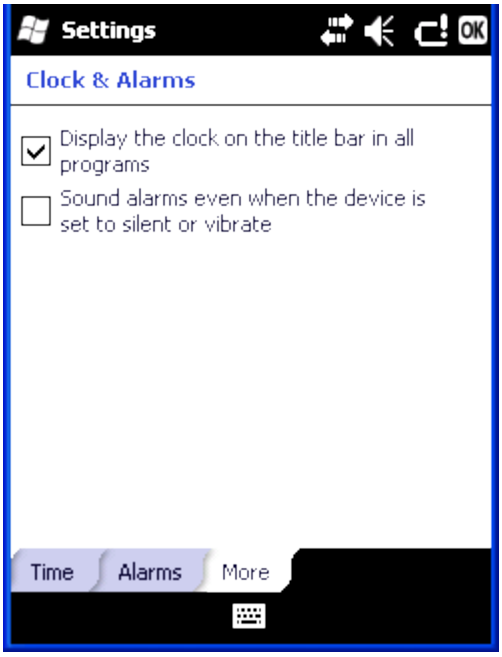


Clock & Alarms Settings – Alarms Panel

To set an alarm:

1. Tap the checkbox to enable the alarm.
2. Tap < Description > and enter a description. The description is limited to 63 characters.
3. Tap the day (or days) to play the alarm.
4. Tap the time to set the time to play the alarm. Set the time and tap ok to return to the Alarms panel.
5. Tap the Bell icon to set the notification. Notifications may include sound, light flash (the Alpha LED flashes) and vibration. Set the desired options and tap ok to return to the Alarms panel.
6. Tap ok when finished to dismiss the Alarms panel.

More



Clock & Alarms Settings – More Panel

Note: Tap Start | Help for context sensitive Windows Mobile Help when changing or viewing options. Tap the X icon in the top right corner to close Windows Mobile Help.

Lock

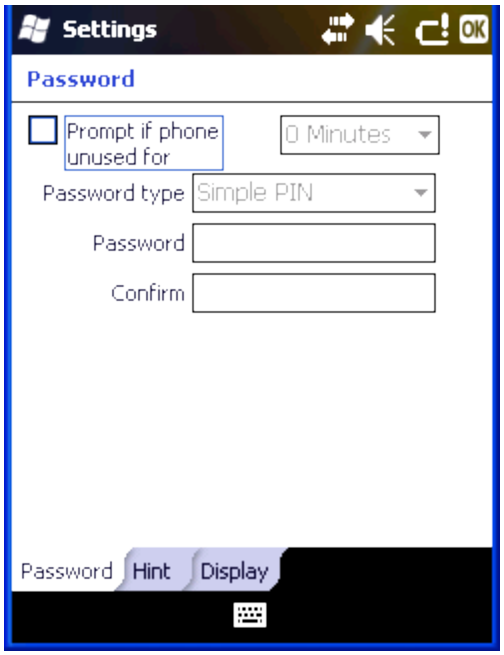
Start | Settings | Lock

Password

Set the lock / unlock behavior for the MX7 Tecton.

Factory Default Settings

Prompt if device unused for	Unchecked
Timer	0 minutes
Password type	Simple PIN
Password	<blank>
Confirm	<blank>



Password Settings – Password Panel

Prompt if phone unused for – Check the checkbox and set the inactivity timeout before the MX7 Tecton locks. When selecting a *Password type* the screen displays a numeric keypad or the input panel depending on the type of password selected.

Note: Once a password has been entered, the password must be used to access the Lock panels again.

Select the Password type, Simple PIN (numeric) or strong alphanumeric. Enter the desired password and confirm. Note that Windows Mobile places restrictions on what it considers a valid password. If the chosen password is not strong enough, a warning is displayed and a new password should be entered and confirmed.

Hint

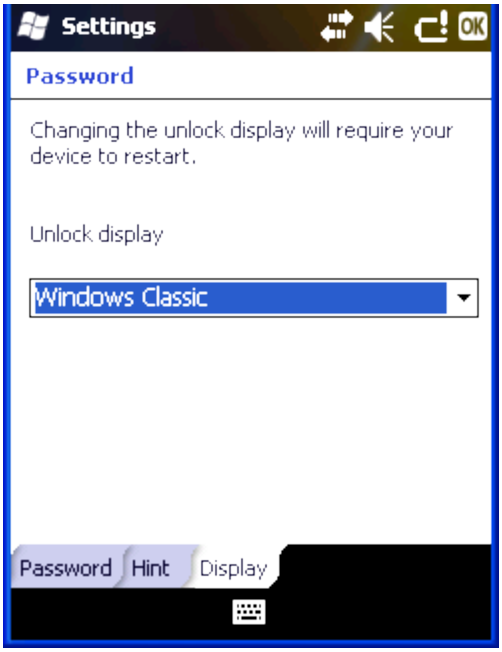
If the password entry isn't successful after a predefined number of attempts, the password hint is displayed.

Factory Default Settings	
Password hint	<blank>

Password Settings – Hint Pane

Display

Unlock display defaults to Windows Classic. Windows Default can be selected to be the unlock display. Changing the unlock display, and tapping OK (at the top right corner of the screen) presents the following screen:



Tap Yes to restart, or cold boot. Tap No to cancel the operation.

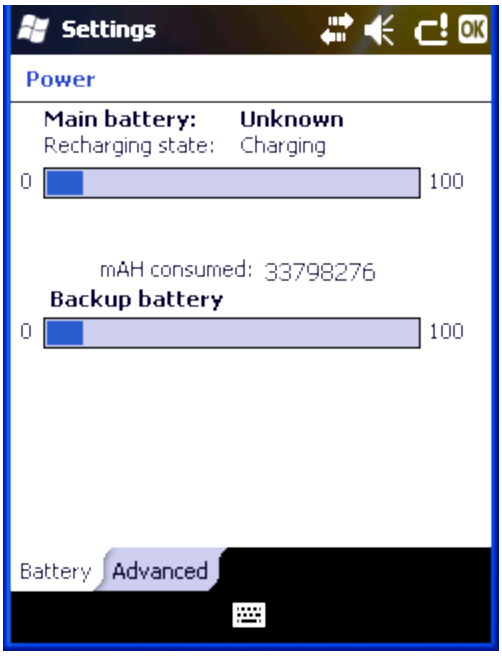
Note: Tap Start | Help for context sensitive Windows Mobile Help when changing or viewing options. Tap the X icon in the top right corner to close Windows Mobile Help.

Power

Start | Settings | System | Power

Reports the current battery state and allows the user to set suspend timeouts.

Battery



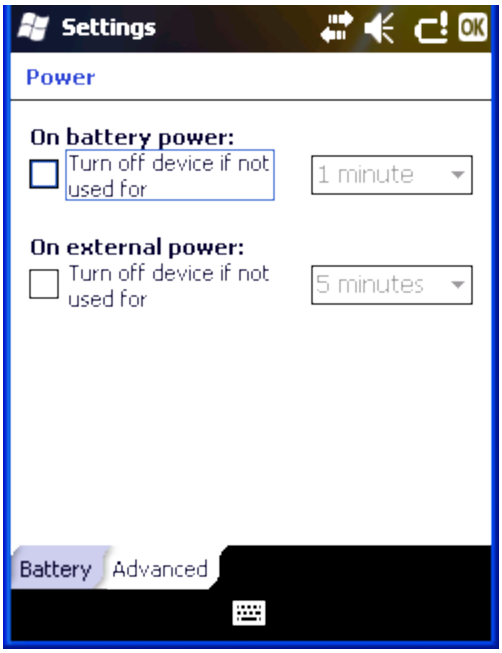
Power Settings – Battery Panel

Battery power is displayed for both the main and internal Super-cap batteries.

Advanced

Factory Default Settings

On battery power:	
Turn off device if not used for	Enabled
Timer setting	1 minute
On external power:	
Turn off device if not used for	Enabled
Timer setting	5 minutes



Power Settings – Advanced Panel

Select the inactivity timeout period before the MX7 Tecton goes into suspend. The settings on this panel are for the suspend timers only. Backlight timers are set using the Backlight settings panel.

Note: Tap Start | Help for context sensitive Windows Mobile Help when changing or viewing options. Tap the X icon in the top right corner to close Windows Mobile Help.

Sounds & Notifications

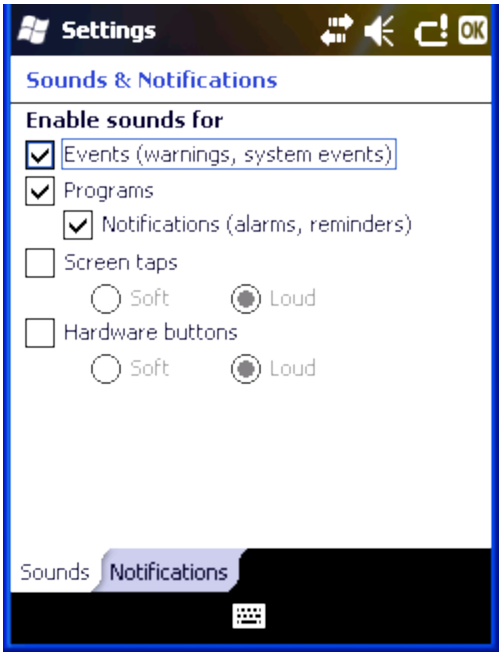
Start | Settings | Personal | Sounds & Notifications

Set volume parameters and assign sound WAV files to Windows Mobile events. Options that cannot be edited by the user are dimmed.

Sounds

Factory Default Settings

Events	Enabled
Programs	Enabled
Notifications	Enabled
Screen taps	Disabled
Hardware buttons	Disabled



Sounds & Notifications Settings – Sounds Panel

Follow the instructions on the screen and tap ok to save the changes. Changes take effect immediately.

Notifications

Sounds & Notifications Settings – Notifications

The Event box lists several events that can have an associated notification. The notification, depending on the event selected, may consist of playing a sound, displaying a screen message, flashing a light or triggering the vibration motor.

When the flash light option is selected, the MX7 Tecton flashes the Alpha LED.

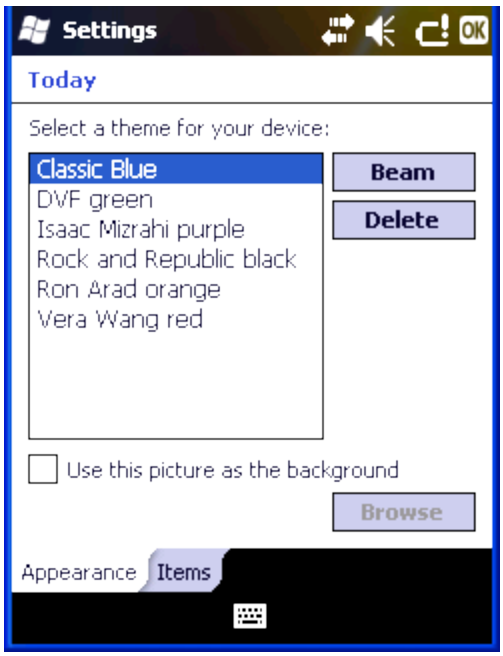
When finished, tap ok to save the changes.

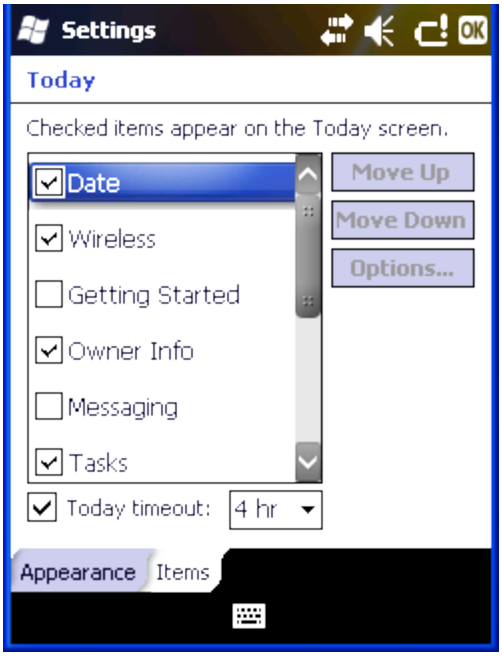
Note: Tap Start | Help for context sensitive Windows Mobile Help when changing or viewing options. Tap the X icon in the top right corner to close Windows Mobile Help.

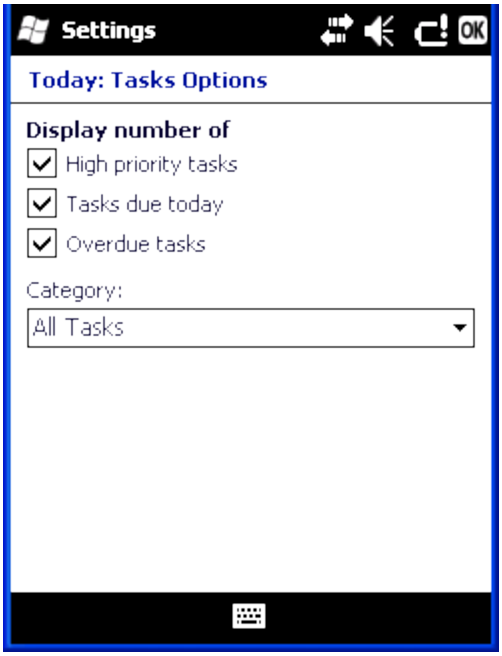
Today

Start | Settings | Today

Configure the appearance and the items to display on the Today screen.







Today Settings – Appearance Panel and Items Panel

Use the **Appearance** panel to assign a theme for the device. The default theme is Windows Mobile Classic Blue. Any user installed themes are included in the list.

Use the **Items** panel to select the items to be shown on the Start panel. Calendar must be selected as well as Date if the date is the only item to be shown on the Start menu.

The Today timeout timer refers to the "return to Today screen" function. When the device is placed in Suspend, and the timer expires, a return from Suspend displays the Today screen, not the application in focus when the MX7 Tecton was placed in Suspend. The application in focus, which is running in the background, will need to be selected again.

Use **Options** to set display parameters for highlighted items in the Checked Items list.

Note: Tap Start | Help for context sensitive Windows Mobile Help when changing or viewing options. Tap the X icon in the top right corner to close Windows Mobile Help.

Personal Panels

About LXE

Start | Settings | Personal | About LXE

The data cannot be edited by the MX7 Tecton user on these panels.

Tab	Contents
Software	GUID, Windows CE Version, OAL Version, Bootloader Version, Compile Version, Programmable Component Version(s) and Language. Language indicates localized version.
Hardware	CPU Type, Codec Type, Display, Flash memory, and DRAM memory
Versions	Revision level of LXE software modules and .NET Compact Framework Version. LXE Utilities, LXE Drivers, LXE Image, LXE API, and Internet Explorer.
Network IP	Current IP address, MAC address, and gateway address for all network ports (radio, ActiveSync).

Version window information is retrieved from the registry.

Version Tab and the Registry

Modify the Registry using the Registry Editor. LXE recommends caution when editing the Registry and also recommends making a backup copy of the registry before changes are made.

The registry settings for the Version tab are under HKEY_LOCAL_MACHINE \ Software \ LXE \ Version in the registry.

To add a user application to the Version panel, create a new string value under the HKLM\Software\LXE\Version key. The string name should be the Application name to appear in the Version window. The data for the value should be the version number to appear in the Version window .

Version strings can be equal to or less than 254 characters. Because the strings are displayed in a text box, any number can be accommodated, up to the 64K byte text box limitation.

Languages

The Software tab may display the current language. All languages are built into the OS image; English, French, German, Simplified Chinese, Traditional Chinese, Japanese, Korean, Spanish, Thai.

Identifying Software Versions

The Versions tab displays the versions of many of the software programs installed. Not all installed software on the mobile device is included in this list and the list varies depending on the applications loaded on the MX7 Tecton. The LXE Image line displays the revision of the system software installed. Refer to the last three digits to determine the revision level.

MAC Address

The Network IP tab displays the MAC address of the network card.

Buttons

Start | Settings | Personal | Buttons

Program Buttons

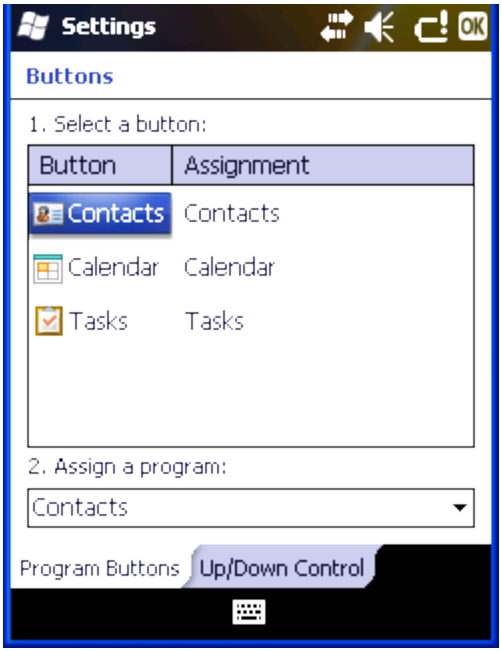
Program buttons can be used to assign functions to certain keys such as F1 through F5 and the diamond keys. Buttons can only be assigned to programs that have an icon in the Start menu or the Settings folder (including sub-folders). A program that is not in the above mentioned locations does not show up in the list here.

Note: The button links to the shortcut to the program, not the executable file.

Note: The System Administrator uses the Buttons setting panels to assign a Status User key and a Status Admin key on the Status Popup panel.

Factory Default Settings

F3, F4, F5, D1, D2, D3	<None>
F1	Left Softkey
F2	Right Softkey



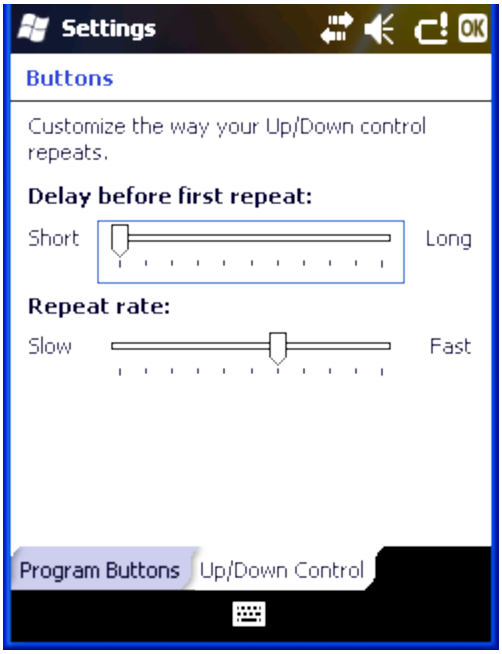
Buttons Settings – Program Buttons Panel

To assign a button:

1. Tap to highlight the desired button.
2. Select the program or shortcut from the *Assign a program* pulldown box.
3. Tap ok.

Up/Down Control

Customize the delay before repeating and the repeat rate for the up/down controls.



Buttons Settings – Up/Down Panel

Note: Tap Start | Help for context sensitive Windows Mobile Help when changing or viewing options. Tap the X icon in the top right corner to close Windows Mobile Help.

Input

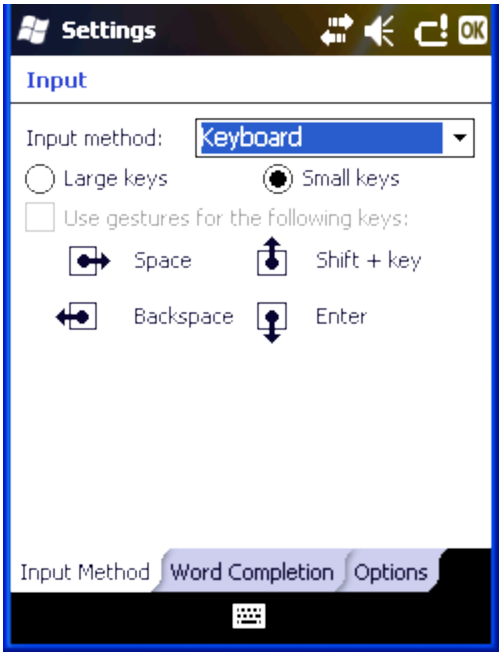
Start | Settings | Personal | Input

Input Method

Select the preferred method of input.

Factory Default Settings

Input Method	Keyboard
Small keys	Enabled



Input Settings – Input Method Panel

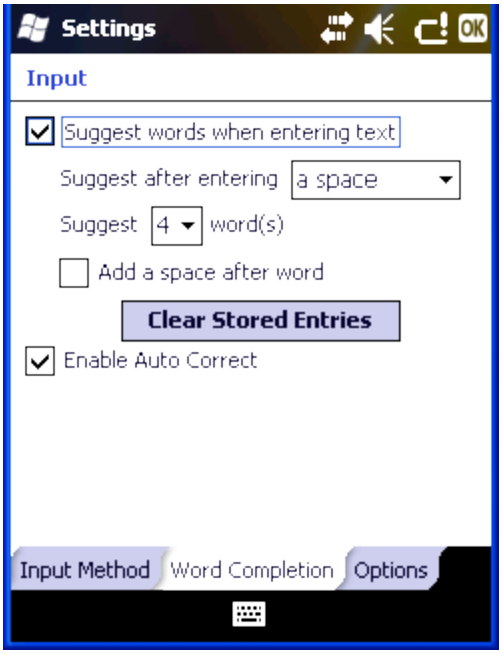
The default method of input is the keyboard or input panel. When the cursor is located in a field allowing text input, the input panel may automatically be displayed. If not automatically displayed, the input panel can be accessed by tapping on the keyboard icon at the bottom center of the screen.

If a different input method is active, the icon for that input method is displayed instead of the keyboard icon.

Tap ok to save any changes.

Word Completion

Factory Default Settings	
Suggest words when entering text	Enabled
Suggest after entering	A space
Suggest _ word(s)	4
Add a space after word	Enabled
Enable auto correct	Enabled

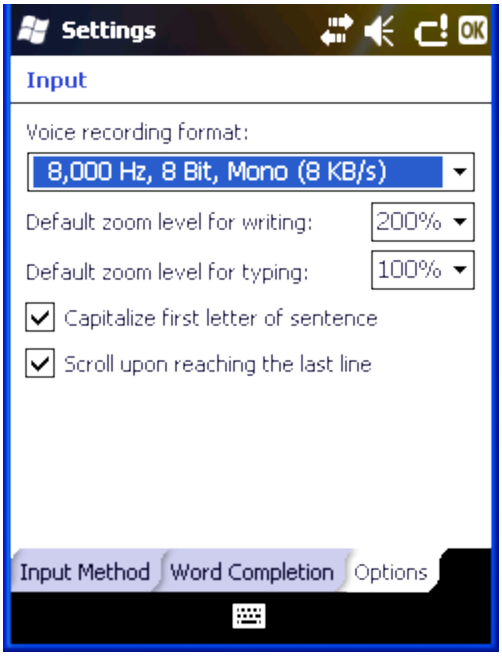


Input Settings – Word Completion Panel

Options

Factory Default Settings

Voice recording format	8000 Hz, 8 Bit, Mono
Default zoom level for writing	200%
Default zoom level for typing	100%
Capitalize first letter of sentence	Enabled
Scroll upon reaching the last line	Enabled



Input Settings – Options Panel

Note: Tap Start | Help for context sensitive Windows Mobile Help when changing or viewing options. Tap the X icon in the top right corner to close Windows Mobile Help.

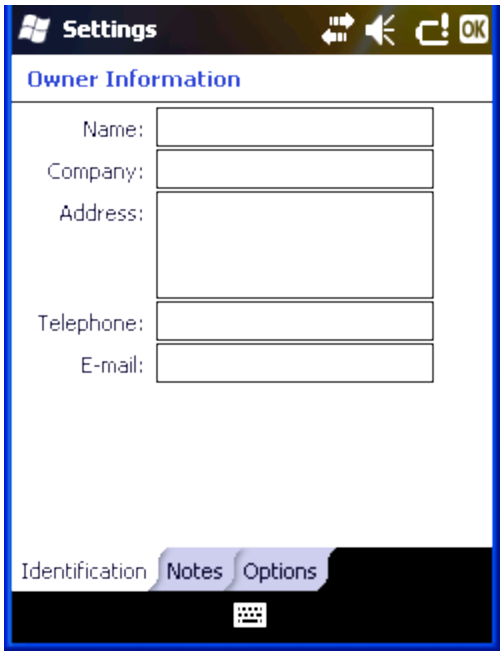
Owner Information

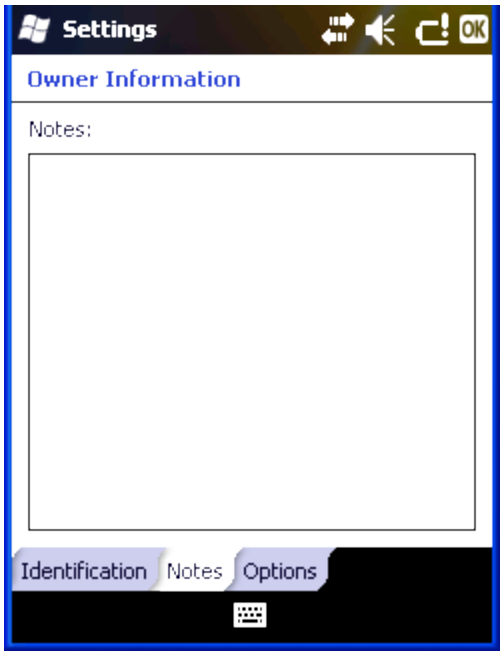
Start | Settings | Personal | Owner Information

Set the MX7 Tecton owner details.

Factory Default Settings

Identification	
Name, Company, Address, Telephone, E-mail	Blank
Notes	
Notes	Blank
Options	
When the device is turned on, display:	
Identification information	Disabled
Notes	Disabled

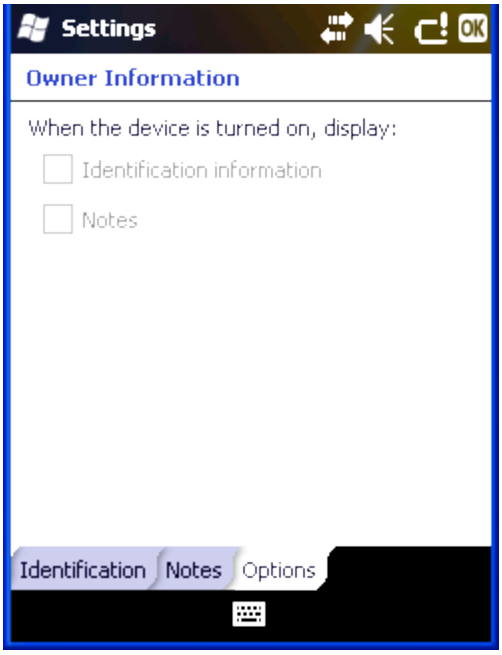




Owner Information Settings

Enter the information and tap ok to save the changes. The changes take effect immediately.

Note: Owner Identification name listed in Start | Settings | Personal | Owner | Information is not used during Bluetooth operation.



Owner Information Settings – Options Panel

If owner information and notes are entered, use the options on this screen to enable the owner information and/or notes to be displayed at startup.

Note: Tap Start | Help for context sensitive Windows Mobile Help when changing or viewing options. Tap the X icon in the top right corner to close Windows Mobile Help.

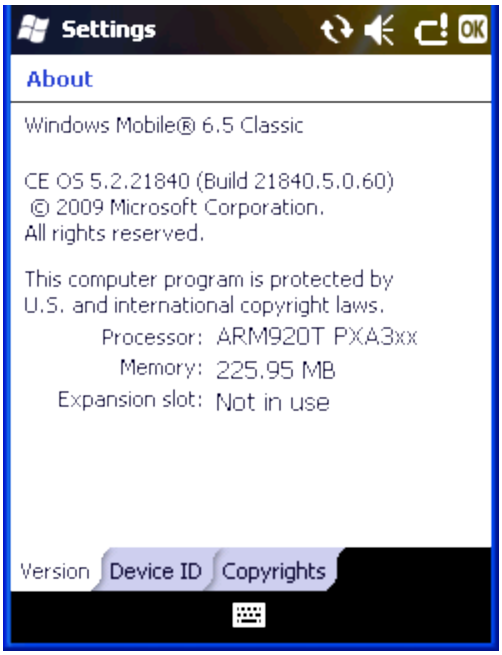
System Panels

About

Start | Settings | System | About

The About panels show OS versions, allow device name and description input and display copyright information.

Version



About Settings – Version Panel

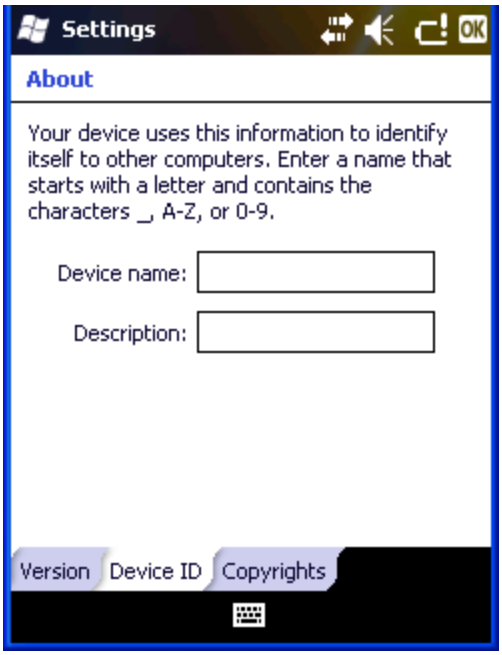
This screen displays information on the installed operating system and the hardware.

Note that Windows Mobile is based on a Windows CE engine. The underlying version of Windows CE is displayed here.

Device ID

Factory Default Settings

Device Name	*[device_specific]*001
Device Description	LXE_MX7 Tecton

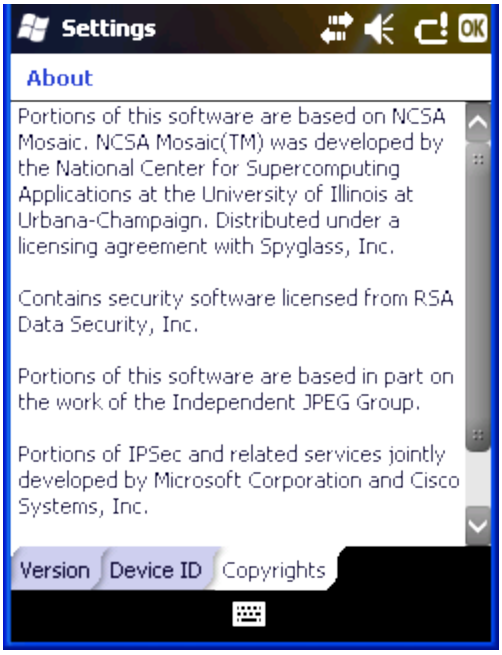

Settings
OK
About
Your device uses this information to identify itself to other computers. Enter a name that starts with a letter and contains the characters _, A-Z, or 0-9.
Device name:
Description:
Version
Device ID
Copyrights

About Settings – Device ID Panel

The device name and description can be changed. Enter the name and description using either the keypad or the Input Panel and tap ok to save the changes. The changes take effect immediately.

Note: The Device Name listed in Start | Settings | System | About | Device ID is not used during Bluetooth operation.

Copyrights


Settings
OK
About
Portions of this software are based on NCSA Mosaic. NCSA Mosaic(TM) was developed by the National Center for Supercomputing Applications at the University of Illinois at Urbana-Champaign. Distributed under a licensing agreement with Spyglass, Inc.
Contains security software licensed from RSA Data Security, Inc.
Portions of this software are based in part on the work of the Independent JPEG Group.
Portions of IPSec and related services jointly developed by Microsoft Corporation and Cisco Systems, Inc.
Version
Device ID
Copyrights

About Settings – Copyright Panel

This screen is presented for information only. The Copyrights information cannot be changed by the user.

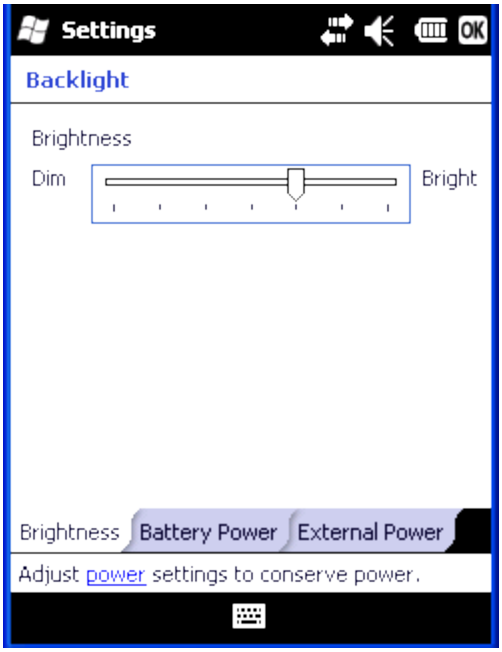
Backlight

Start | Settings | System | Backlight

Set the power management timers for the display and keypad backlights. Set the display brightness for battery and external power.

Backlight

Factory Default Settings	
Default setting	70%

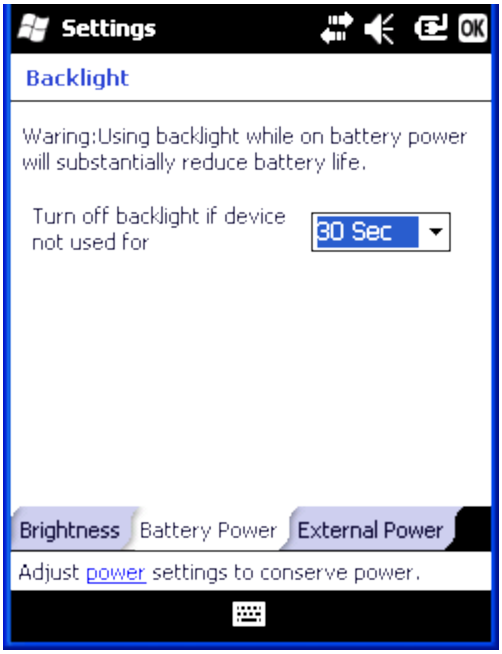


Slide the marker left and right to select the desired keypad and display brightness level. Adjust the settings and tap ok to save the changes. The changes take effect immediately

IMPORTANT – When the backlight timer expires, the display backlight and the display are OFF, as is the keypad backlight. This is the System Idle state, there is no separate User Idle state.

Battery Power

Factory Default Settings	
Turn off backlight if device not used for	30 seconds

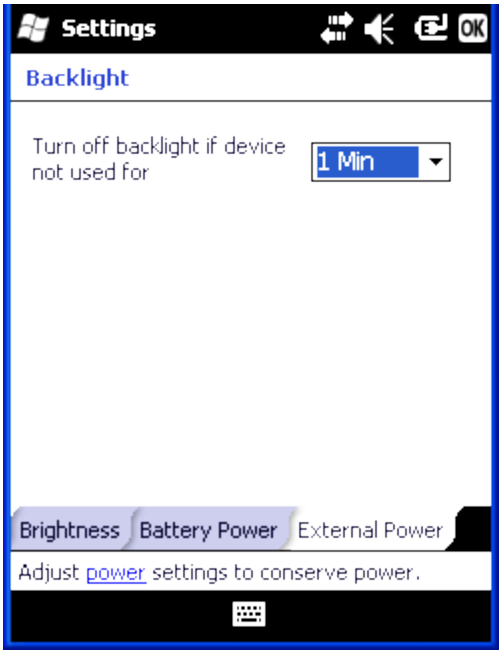


Backlight Settings – Battery Power Panel

When the MX7 Tecton is on battery power and the backlight timer expires, the display and the backlights for the display and keypad are turned off. Adjust the settings and tap OK to save the changes. The changes take effect immediately.

External Power

Factory Default Settings	
Turn off backlight if device is not used for	1 minute



Backlight Settings – External Power Panel

When the MX7 Tecton is on external power and the backlight timer expires, the display and the backlights for the display and keypad are turned off. Adjust the settings and tap ok to save the changes. The changes take effect immediately.

Note: Tap Start | Help for context sensitive Windows Mobile Help when changing or viewing options. Tap the X icon in the top right corner to close Windows Mobile Help.

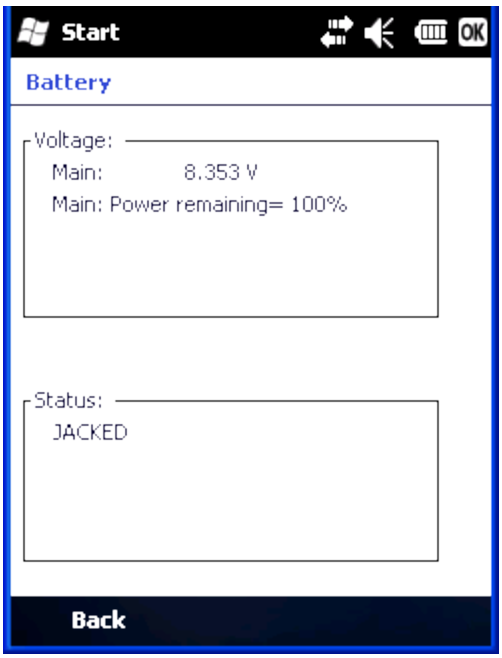
Battery

Start | Settings | Battery

This panel is used to view the status and percentage of power remaining in the MX7 Tecton main battery.

Jacked is shown in the Status box when the Main battery is receiving external power.

The main battery is charged/recharged when the MX7 Tecton is docked in a powered cradle or directly cabled to an external power source.



The internal battery draws power from the Main battery to maintain a charge. The Super-cap battery voltage and percentage of power fluctuate continuously.

When there is no Main battery in the unit, the internal battery begins to discharge as it maintains RAM and other vital settings. After a Main battery is installed, the internal battery begins to draw power from the Main battery again and is fully recharged in five minutes or less.

Note: Frequent connection to an external power source, if feasible, is recommended to maintain main battery charge status as the Super-cap battery cannot be recharged by a dead or missing main battery.

Bluetooth

Start | Settings | System | Bluetooth

Note: Contact your LXE representative for upgrade availability if your Bluetooth panels are not the same as the panels presented in this section.

Discover and manage pairing with nearby Bluetooth devices.

Factory Default Settings

Discovered Devices	None
Settings	
Turn On Bluetooth	Enabled
Computer is connectable	Enabled
Computer is discoverable	Disabled
Prompt if devices request to pair	Enabled
Continuous search	Disabled
Filtered Mode	Enabled
Printer Port on COM9:	Disabled (unchecked) by default in both Filtered and Non Filtered Modes. The option is dimmed in Non Filtered Mode.
Logging	Disabled
Computer Friendly Name	[*System Name*]
Reconnect	
Report lost connection	Enabled
Report when reconnected	Disabled
Report failure to reconnect	Enabled
Clear Pairing Table on boot	Disabled
Auto Reconnect on Boot	Enabled
Auto Reconnect	Enabled

Bluetooth icon (at the bottom of the Today panel) state and Bluetooth device Icon states change as Bluetooth devices are discovered, paired, connected and disconnected. There may be audible or visual signals as paired devices re-connect with the MX7 Tecton.

- The default Bluetooth setting is On.
- The MX7 Tecton cannot be discovered by other Bluetooth devices when the **Computer is discoverable** option is disabled (unchecked) on the Settings panel.
- Other Bluetooth devices cannot be discovered if they have been set up to be Non-Discoverable or Invisible.
- When **Filtered Mode** is enabled, the MX7 Tecton can pair with one Bluetooth scanner and one Bluetooth printer.
- When **Filtered Mode** is disabled, the MX7 Tecton can pair with up to four Bluetooth devices connected at the same time.
- It is not necessary to disconnect a paired scanner and printer before a different scanner or printer is paired with the MX7 Tecton.

- The target Bluetooth device should be as close as possible (up to 32.8 ft (10 meters) Line of Sight) to the MX7 Tecton during the pairing process.

Assumption:The System Administrator has Discovered and Paired targeted Bluetooth devices for the MX7 Tecton. The MX7 Tecton operating system has been upgraded to the revision level required for Bluetooth client operation. An application (or API) is available that will accept data from serial Bluetooth devices.

Initial Configuration

1. Select **Start | Settings | System | Bluetooth** or tap the Bluetooth icon at the bottom of the Today panel.
2. Tap the Settings Tab.
3. Change the Computer Friendly Name at the bottom of the Settings display. The Bluetooth MX7 Tecton default name is determined by the factory installed software version. LXE strongly urges assigning every MX7 Tecton a unique name (up to 32 characters) before Bluetooth Discovery is initiated.
4. Check or uncheck the MX7 Tecton Bluetooth options on the Settings tab and the Reconnect tab.
5. Tap the OK button to save your changes.

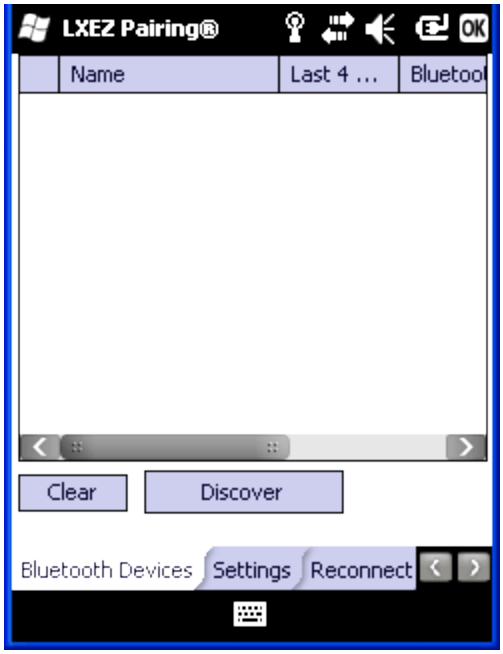
Subsequent Use

Note: Today panel and Bluetooth device Icon states change as Bluetooth devices are discovered, paired, connected and disconnected. A Today panel Bluetooth icon with a red background indicates Bluetooth is active and not paired with any device. A device icon with a red background indicates a disconnected paired device.

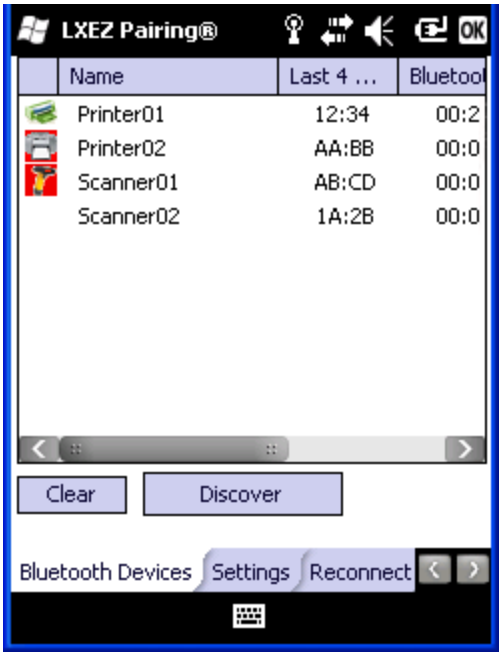
1. Tap the Bluetooth icon at the bottom of the Today panel to open the Bluetooth LXEZ Pairing application.
2. Tap the Bluetooth Devices tab.
3. Tap the Discover button. When the Bluetooth module begins searching for in-range Bluetooth devices, the button name changes to Stop. Tap the Stop button to cancel the Discover function at any time.
4. The discovered devices are listed in the Bluetooth Devices window.
5. Highlight a Bluetooth device in the Discovered window and double-tap to open the device properties menu.
6. Tap Pair as Scanner to set up the MX7 Tecton to receive scanner data.
7. Tap Pair as Printer to set up the MX7 Tecton to send data to the printer.
8. Tap Serial Device (when Filtered mode is disabled) to set up the MX7 Tecton to communicate with a Bluetooth serial device.
9. Tap Disconnect to stop pairing with the device. Once disconnected, tap Clear to remove the device name and data from the MX7 Tecton Bluetooth Devices list. Select Yes at the "Delete all disconnected devices? Yes / No" dialog box.
10. Upon successful pairing, the selected device may react to indicate a successful connection. The reaction may be an audio signal from the device, flashing LED on the device, or a dialog box is placed on the MX7 Tecton display.
11. Whenever the MX7 Tecton is turned On, all previously paired, live, Bluetooth devices in the vicinity are paired, one at a time, with the MX7 Tecton. If the devices cannot connect to the MX7 Tecton before the re-connect timeout time period expires (default is approximately 20 seconds for each paired device) there is no indication of the continuing disconnect state if Report Failure to Reconnect is disabled.

Bluetooth Devices

The Bluetooth Devices tab displays any device previously discovered and paired with the MX7 Tecton.



Before Discover (or initial setup)

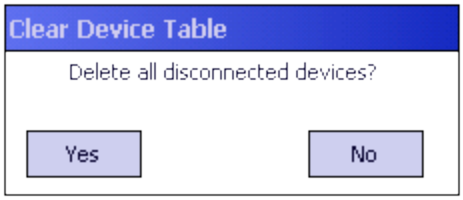


After Discover

Bluetooth Devices Panel

Clear Button

Deletes all devices from the Device table that are not currently paired. A dialog box is presented.



Tap the Yes button to remove disconnected or deleted devices from the device table. The devices are removed from the Device table after any reboot sequence. Tap the No button to make no changes.

See "Clear Pairing Table on Boot" on page 82

Discover Button

When tapped, the Bluetooth client discovers and displays all Bluetooth devices in the vicinity. Bluetooth managed devices should be as close as possible[1], in direct line of sight, with the MX7 Tecton during the Discover process.

At the end of the Discover process, and when Filtered Mode is disabled/unchecked, serial Bluetooth devices as well as Bluetooth scanners and printers are displayed in the Device table. When Filtered Mode is enabled/checked, only Bluetooth scanners and printers are displayed in the Device table.

Discover

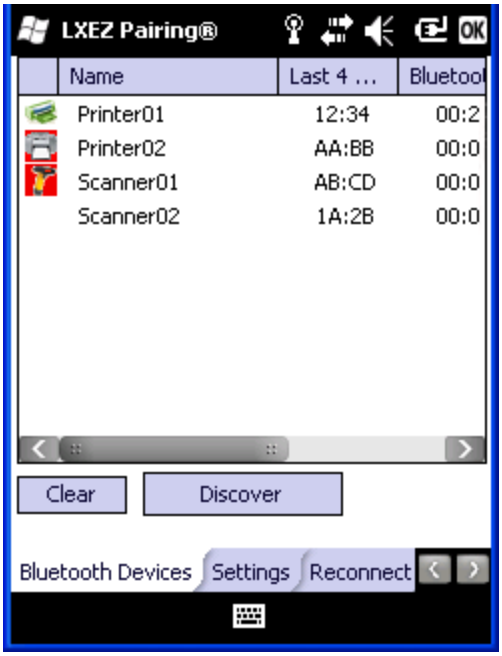
Tap the Discover button to locate all discoverable Bluetooth devices in the vicinity. The Discovery process also queries for the unique identifier of each device discovered.

Tap Stop at any time to end the Discover and Query for Unique Identifier functions.

Note: When an active paired device enters Suspend Mode, is turned Off or leaves the MX7 Tecton Bluetooth scanning range, the Bluetooth connection between the paired device and the MX7 Tecton is lost. There may be audible or visual signals as paired devices disconnect from the MX7 Tecton.

[1] No more than 32.80 feet (10 meters) line of sight in a quiet environment.

Bluetooth Device List



The discovered paired devices may or may not be identified with an icon. Discovered devices without an icon can be paired as a Serial device, Scanner or a Printer. The Bluetooth panel assigns an icon to the device name.

An icon with a red background indicates the device's Bluetooth connection is inactive.

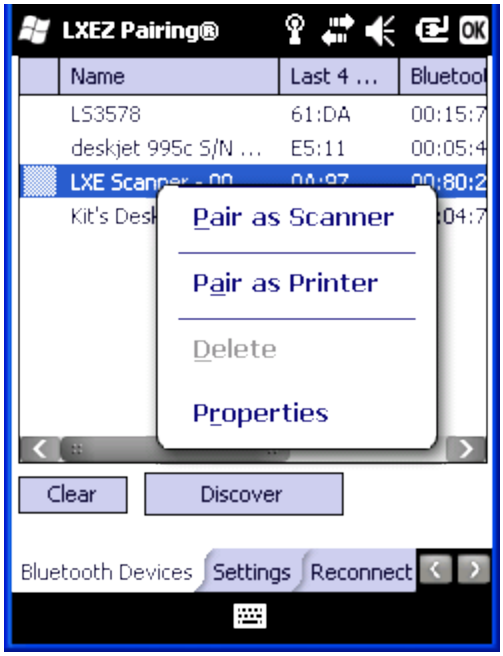
An icon with a white background indicates the device is connected to the MX7 Tecton and the device's Bluetooth connection is active.

Double-tap a device in the list to open the device properties menu. The target device does not need to be active.

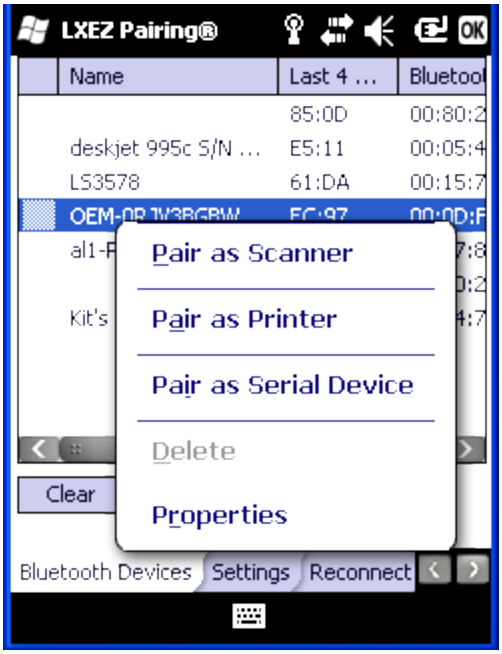
Bluetooth Device Menu

Pre-requisite: The Discover button has been clicked and there are Bluetooth devices listed.

Click on a device in the list to highlight it. Double-click the highlighted device to display the Bluetooth Device right click menu. The Bluetooth device does not need to be active.



Filtered Mode On

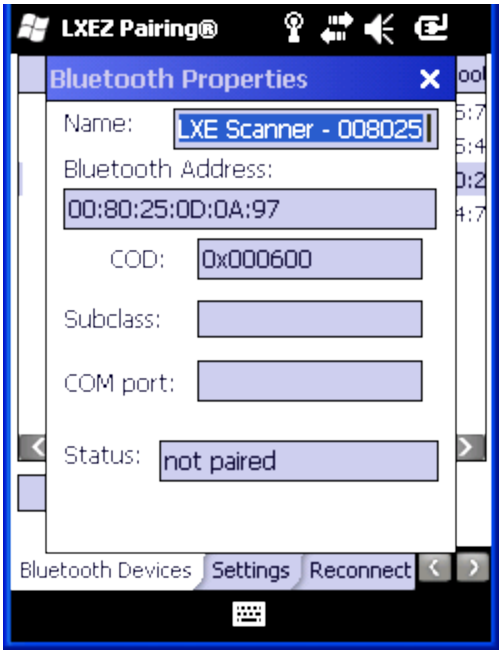


Filtered Mode Off

Right Click Menu

Right Click Menu Options	
Pair as Scanner	Receive data from the highlighted Bluetooth scanner or Bluetooth imager.
Pair as Printer	Send data to the highlighted Bluetooth printer.
Pair as Serial Device	Communicate with the highlighted serial Bluetooth device. This option is available when Filtered Mode is disabled.
Disconnect	Stop the connection between the MX7 Tecton and the highlighted paired Bluetooth device.
Delete	Remove an unpaired device from the Bluetooth device list. The highlighted device name and identifier is removed from the MX7 Tecton Bluetooth Devices panel after the user taps OK.
Properties	More information on the highlighted Bluetooth device.

Bluetooth Device Properties

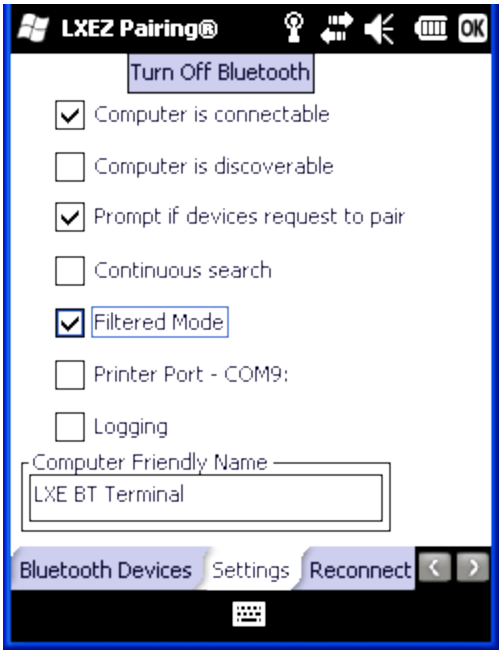


Bluetooth Device Properties Menu

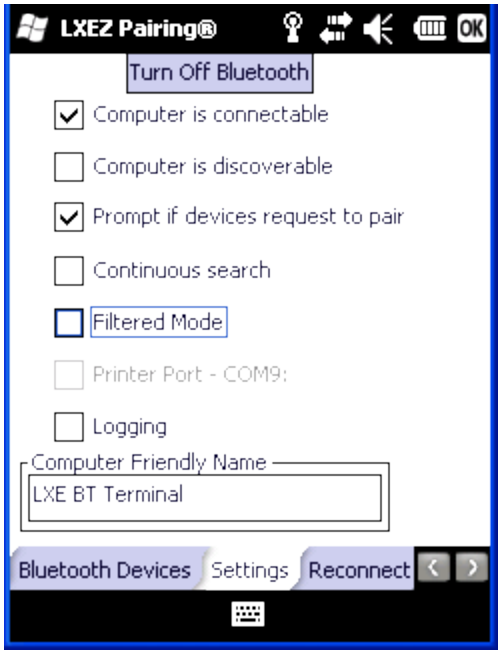
Data on the Bluetooth Properties panel cannot be changed by the user. The data displayed is the result of the device Query performed during the Discovery process.

The Status dialog box reflects the current state of the highlighted device.

Settings



Filtered Mode On



Filtered Mode Off

Bluetooth Device Settings Panel

Note: These options can still be checked or unchecked whether Bluetooth connection is enabled or disabled.

Turn On Bluetooth

Tap the button to toggle the Bluetooth client On or Off. The button title changes from *Turn Off Bluetooth* to *Turn On Bluetooth*.

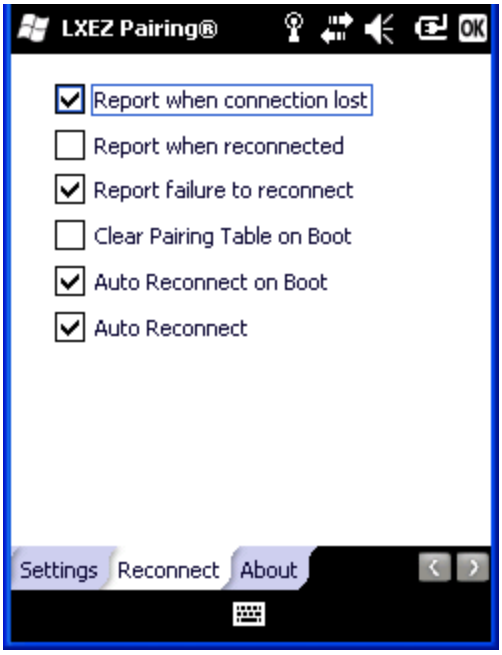
Default

The default value is Disabled (Bluetooth client is off).

Options

Option	Information
Computer is connectable	This option is Enabled (checked) by default. Disable this option to inhibit MX7 Tecton connection initiated by a Bluetooth scanner.
Computer is discoverable	This option is Disabled (unchecked) by default. Enable this option to ensure other devices can discover the MX7 Tecton.
Prompt if devices request to pair	This option is Enabled (checked) by default. A dialog box appears on the MX7 Tecton screen notifying the user a Bluetooth device requests to pair with the MX7 Tecton. The requesting Bluetooth device does not need to have been Discovered by the MX7 Tecton before the pairing request is received. Tap the Accept button or the Decline button to remove the dialog box from the screen. *Note: In some cases, if a Bluetooth device is already paired this setting cannot be changed. If this is the case, an error message is displayed and the option is not changed. The Bluetooth device must be disconnected before changing this setting.*
Continuous Search	This option is Disabled (unchecked) by default. When enabled (checked), the Bluetooth connection never stops searching for a device it has paired with when the connection is broken (such as the paired device entering Suspend mode, going out of range or being turned off). When disabled, after being enabled, the MX7 Tecton stops searching after 30 minutes. This option draws power from the Main Battery.
Filtered Mode	This option is Enabled (checked) by default. Determines whether the Bluetooth client discovers and displays all serial Bluetooth devices in the vicinity (Filtered Mode is disabled/unchecked) or the discovery result displays Bluetooth scanners and printers only (Filtered Mode is enabled/checked). When Filtered Mode is disabled, the MX7 Tecton can pair with up to four Bluetooth devices. A Restart is required every time Filtered Mode is toggled on and off.
Printer Port - COM9	This option is Disabled (unchecked) by default. This option assigns Bluetooth printer connection to COM9 instead of COM19. To enable this option, Filtered Mode must be disabled/unchecked.
Logging	This option is Disabled (unchecked) by default. When logging is enabled, the MX7 Tecton creates *bt_log.txt* and stores it in the /System folder. Bluetooth activity logging is added to the text file as activity progresses. A *bt_log_bak.txt* file contains the data stored by *bt_log.txt* prior to reboot. During a reboot process, the MX7 Tecton renames *bt_log.txt* to *bt_log_bak.txt*. If a file already exists with that name, the existing file is deleted, the new *bt_log_bak.txt* file is added and a new *bt_log.txt* is created.
Computer Friendly Name	This option is [*System Name*] by default. The name, or identifier, entered in this space by the System Administrator is used exclusively by Bluetooth devices and during Bluetooth communication.

Reconnect



Bluetooth Device Reconnect Panel

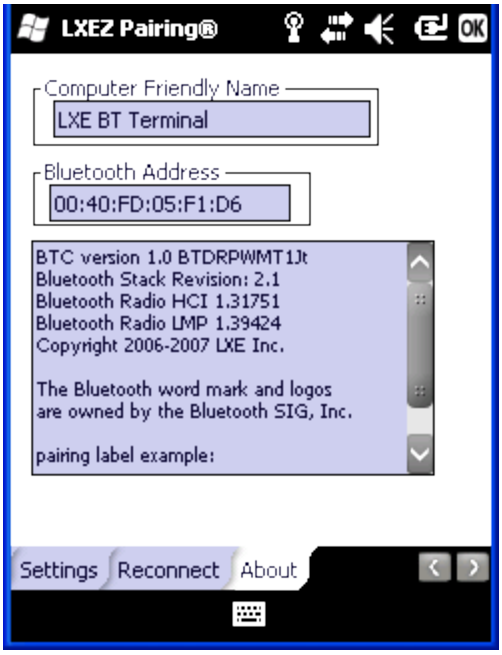
Note: These options can still be checked or unchecked whether Bluetooth connection is enabled or disabled.

Options

Option	Information
Report when connection lost	This option is Enabled (checked) by default. There may be an audio or visual signal when a connection between a paired, active device is lost. A visual signal may be a dialog box placed on the display notifying the user the connection between one (or all) of the paired Bluetooth devices has stopped. Tap the ok button to remove the dialog box from the screen.
Report when reconnected	This option is Disabled (unchecked) by default. There may be an audio or visual signal when a connection between a paired, active device is lost. A visual signal may be a dialog box placed on the display notifying the user the connection between one (or all) of the paired Bluetooth devices has stopped. Tap the ok button to remove the dialog box from the screen.

Option	Information
Report failure to reconnect	This option is Enabled (checked) by default. The default time delay is 30 minutes. This value cannot be changed by the user. There may be an audio or visual signal when a connection between a paired, active device fails to re-connect. A visual signal may be a dialog box placed on the display notifying the user the connection between one (or all) of the previously paired Bluetooth devices has failed. Tap the X button or ok button to close the dialog box. Possible reasons for failure to reconnect: Timeout expired without reconnecting; attempted to pair with a device that is currently paired with another device; attempted to pair with a known device that moved out of range or was turned off; attempted to pair with a known device but the reason why reconnect failed is unknown.
Clear Pairing Table on Boot	This option is Disabled (unchecked) by default. When enabled (checked), all previous paired information is deleted upon any reboot sequence and no devices are reconnected. When enabled (checked) *Auto Reconnect on Boot* is automatically disabled (dimmed).
Auto Reconnect on Boot	This option is Enabled (checked) by default. All previously paired devices are reconnected upon any reboot sequence. When disabled (unchecked), no devices are reconnected upon any reboot sequence.
Auto Reconnect	This option is Enabled (checked) by default. This option controls the overall mobile Bluetooth device reconnect behavior. When Auto Reconnect is disabled (unchecked), *Auto Reconnect on Boot* is automatically disabled and dimmed. When Auto Reconnect is disabled (unchecked), no devices are reconnected in any situation. The status of *Auto Reconnect on Boot* is ignored and no devices are reconnected on boot. The status of *Clear Pairing Table on Boot* controls whether the pairing table is populated on boot. When Auto Reconnect is enabled (checked) and *Auto Reconnect on Boot* is disabled (unchecked), devices are not reconnected on boot, but are reconnected in other situations (example: return from out-of-range). When Auto Reconnect is enabled (checked) and *Clear Pairing Table on Boot* is enabled (checked), devices are not reconnected on boot, but are reconnected in other situations (example: return from out-of-range). The pairing table is cleared on boot. The status of *Auto Reconnect on Boot* is ignored and the option is automatically disabled (unchecked) and dimmed.

About



Bluetooth About Panel

This panel lists the assigned Computer Friendly Name (that other devices may discover during their Discovery and Query process), the Bluetooth MAC address, and software version levels. The data cannot be edited by the user.

Easy Pairing and Auto-Reconnect

The Bluetooth module can establish relationships with new devices after the user taps the Discover button. It can auto-reconnect to devices previously known but which have gone out of range and then returned within range.

Note: Configuration elements are persistent and stored in the registry.

Setup the Bluetooth module to establish how the user is notified by easy pairing and auto-reconnect events.

AppLock, if installed, does not stop the end-user from using the Bluetooth application, nor does it stop other Bluetooth-enabled devices from pairing with the MX7 Tecton while AppLock is in control.

Bluetooth Indicators

The Bluetooth icon state changes as Bluetooth devices are discovered, paired, connected and disconnected.

There may be audible or visual signals as paired devices re-connect with the MX7 Tecton.

Taskbar Icon	Legend
	MX7 Tecton is connected to one or more of the targeted Bluetooth device(s).
	MX7 Tecton is not connected to any Bluetooth device. MX7 Tecton is ready to connect with any Bluetooth device. MX7 Tecton is out of range of all paired Bluetooth device(s). Connection is inactive.

Note: When an active paired device enters Suspend Mode, is turned Off or leaves the MX7 Tecton Bluetooth scan range, the Bluetooth connection between the paired device and the MX7 Tecton is lost. There may be audible or visual signals as paired devices disconnect from the MX7 Tecton.

AppLock, if installed, does not stop the end-user from using Bluetooth applications, nor does it stop authorized Bluetooth-enabled devices from pairing with the MX7 Tecton while AppLock is in control.

Bluetooth Barcode Reader Setup

Please refer to the Bluetooth scanner manufacturer's User Guide; it may be available on the manufacturer's web site. Contact your LXE representative for Bluetooth product assistance.

Introduction

LXE supports several different types of barcode readers. This section describes the interaction and setup for a mobile Bluetooth laser scanner or laser imager connected to the MX7 Tecton using Bluetooth functions.

Prerequisites

- The MX7 Tecton must have the Bluetooth hardware and software installed. An operating system upgrade may be required. Contact your LXE representative for details.
- If the MX7 Tecton has a Bluetooth address identifier barcode label affixed, then Bluetooth hardware and software are installed.
- The mobile Bluetooth laser scanner / laser imager battery is fully charged.
- The MX7 Tecton main battery is fully charged. Alternatively, the MX7 Tecton may be cabled to AC/DC power.
- ***Important****: The barcode numbering examples in this segment are not real and should not be created nor scanned with a Bluetooth scanner.*
- To open the LXEZ Pairing program, tap **Start | Settings | System | Bluetooth** or tap the Bluetooth icon at the bottom of the Today panel.

Sample Bluetooth Address Barcode Label

Locate the barcode label, similar to the one shown above, attached to the MX7 Tecton. The label is the Bluetooth address identifier for the MX7 Tecton.

The mobile Bluetooth scanner / imager requires this information before discovering, pairing, connecting or disconnecting can occur.

Important: The MX7 Tecton Bluetooth address identifier label should be protected from damage (rips, tears, spills, soiling, erasure, etc.) at all times. It may be required when pairing, connecting, and disconnecting new Bluetooth barcode readers.

MX7 Tecton with Label

If the MX7 Tecton has a Bluetooth address barcode label attached, follow these steps:

1. Scan the Bluetooth address barcode label, attached to the MX7 Tecton, with the LXE Bluetooth mobile scanner.
2. If this is the first time the Bluetooth scanner has scanned the MX7 Tecton Bluetooth label, the devices are paired. See section titled "Bluetooth Beep and LED Indications". If the devices do not pair successfully, go to the next step.
3. Open the LXEZ Pairing panel (Start | Settings | System | Bluetooth).
4. Tap Discover. Locate the Bluetooth scanner in the Discovery panel.
5. Double-tap the stylus on the Bluetooth scanner. The right-mouse-click menu appears.
6. Select Pair as Scanner to pair the MX7 Tecton with the Bluetooth mobile scanner.

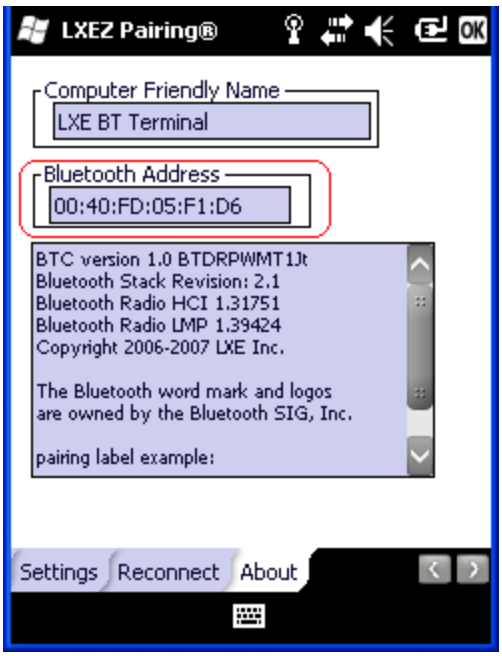
The devices are paired. The Bluetooth barcode reader responds with a series of beeps and an LED flashes. Refer to the following section titled "Bluetooth Beep and LED Indications".

Note: After scanning the MX7 Tecton Bluetooth label, if there is no beep and no LED flash from the Bluetooth device, the devices are currently paired.

MX7 Tecton without Label

If the MX7 Tecton Bluetooth address barcode label does not exist, follow these steps to create a unique Bluetooth address barcode for the MX7 Tecton:

First, locate the MX7 Tecton Bluetooth address by tapping Start | Settings | System | Bluetooth | About tab.



About Tab and Bluetooth Address

Next, create[1] a Bluetooth address barcode label for the MX7 Tecton.

The format for the barcode label is as follows:

- Barcode type must be Code 128.
- FNC3 character followed by string Uppercase L, lowercase n, lowercase k, uppercase B and then the Bluetooth address (12 hex digits, no colons). For example, LnkB0400fd002031.

Create and print the label.

Scan the MX7 Tecton Bluetooth address barcode label with the Bluetooth barcode reader.

The devices are paired. The Bluetooth barcode reader responds with a series of beeps and LED flashes.

Note: After scanning the MX7 Tecton Bluetooth label, if there is no beep and no LED flash from the Bluetooth device, the devices are currently paired.

See "Bluetooth Reader Beep and LED Indications" on page 88

[1] Free barcode creation software is available for download on the World Wide Web. Search using the keywords “barcode create”.

Bluetooth Reader Beep and LED Indications

Beep Type from Bluetooth Device	Behavior
Acknowledge label	1 beep
Label rejected	2 beeps at low frequency
Transmission error	Beep will sound high-low-high-low
Link successful	Beep will sound low-medium-high
Link unsuccessful	Beep will sound high-low-high-low

LED on Bluetooth Device	Behavior
Yellow LED blinks at 2 Hz	Linking in progress
Off	Disconnected or unlinked
Yellow LED blinks at 50 Hz	Bluetooth transmission in progress
Yellow LED blinks at the same rate as the paging beep (1 Hz)	Paging
Green LED blinks once a second	Disabled indication

Upon startup, if the scanner sounds a long tone, this means the scanner has not passed its automatic Selftest and has entered isolation mode. If the scanner is reset, the sequence is repeated. Contact your LXE representative or LXE Customer Support for assistance.

Bluetooth Printer Setup

The Bluetooth managed device should be as close as possible[1], in direct line of sight, with the MX7 Tecton during the pairing process.

1. Open the LXEZ Pairing Panel (Start | Settings | System | Bluetooth).
2. Tap Discover. Locate the Bluetooth printer in the discovery panel.
3. Tap and hold the stylus (or double-tap) on the Bluetooth printer until the right-mouse-click menu appears.
4. Select Pair as Printer to pair the MX7 Tecton with the Bluetooth managed printer.

The devices are paired. The Bluetooth managed printer may respond with a series of beeps or LED flashes.

Please refer to the Bluetooth managed printer manufacturer's User Guide; it may be available on the manufacturer's web site. Contact your LXE representative for Bluetooth product assistance.

Note: If there is no beep or no LED flash from the Bluetooth managed printer, the MX7 Tecton and the printer are currently paired.

[1] No more than 32.80 feet (10 meters) line of sight in a quiet environment.

Certificates

Start | Settings | System | Certificates

Manage digital certificates used for secure communication.

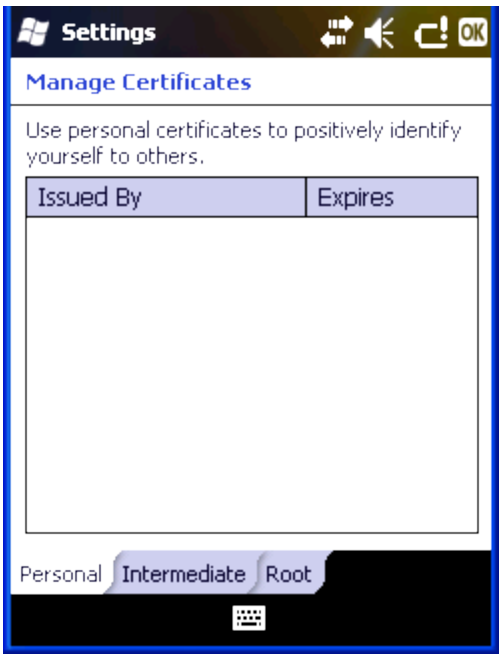
View – displays details of the certificate. Personal certificates may be extended from the view screen.

Delete – removes the certificate from the device. Delete is not available if the certificate was installed by a device administrator.

Certificates are divided into three types: Personal, Intermediate and Root.

See Certificates in the Wireless Network Configuration section for detailed instruction on generating certificates.

Personal



Certificate Settings – Personal Panel

This panel lists any installed Personal certificates. Personal certificates are used to identify the user of the device.

To install a User certificate:

1. Copy the .pfx or .p12 file to a folder on the MX7 Tecton.
2. Use File Explorer to browse to the location of the file and open the file by tapping the file name.
3. Type in the password to unlock the certificate and tap Done.

The new certificate is copied to the Personal certificate store on the MX7 Tecton.

Intermediate

Certificate Settings – Intermediate Panel

This panel lists any installed Intermediate certificates. Intermediate certificates are used to help authenticate certificates received from other hosts.

To install an Intermediate certificate:

1. Copy a DER-encoded .cer file, a base64-encoded .cer file or a .pfx file to a folder on the MX7 Tecton.
2. Use File Explorer to browse to the location of the file and open the file by tapping the file name.

The new certificate is copied to Intermediate certificate store on the MX7 Tecton.

Root

Certificate Settings – Root Panel

This panel lists any installed Root certificates. Root certificates are used to authenticate certificates received from other hosts.

To install a Root certificate:

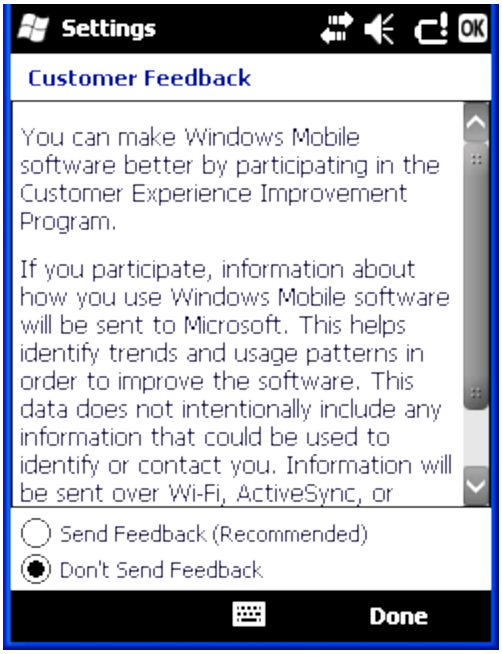
1. Copy a DER-encoded .cer file, a base64-encoded .cer file or a .pfx file to a folder on the MX7 Tecton.
2. Use File Explorer to browse to the location of the file and open the file by tapping the file name.

The new certificate is copied to Root certificate store on the MX7 Tecton.

Note: Tap Start | Help for context sensitive Windows Mobile Help when changing or viewing options. Tap the X icon in the top right corner to close Windows Mobile Help.

Customer Feedback

Start | Settings | System | Customer Feedback


Settings
OK
Customer Feedback
You can make Windows Mobile software better by participating in the Customer Experience Improvement Program.
If you participate, information about how you use Windows Mobile software will be sent to Microsoft. This helps identify trends and usage patterns in order to improve the software. This data does not intentionally include any information that could be used to identify or contact you. Information will be sent over Wi-Fi, ActiveSync, or
Send Feedback (Recommended)
Don't Send Feedback
Done

Customer Feedback Settings

Elect to send feedback as part of Microsoft's Customer Experience Improvement Program. The default is Don't Send Feedback.

In order to send feedback, the MX7 Tecton must have Internet access.

Note: Tap Start | Help for context sensitive Windows Mobile Help when changing or viewing options. Tap the X icon in the top right corner to close Windows Mobile Help.

Data Collection

Start | Settings | System | Data Collection

Set scanner/imager keyboard wedge parameters, enable or disable symbologies from being scanned, scanner icon appearance, active scanner port, and scan key settings. Assign baud rate, parity, stop bits and data bits for available COM ports. Scanner parameters apply to the MX7 Tecton integrated scanner/imager only. Barcode manipulation parameters apply to barcodes scanned by the MX7 Tecton integrated scanner/imager engine.

Scanner configuration can be changed using the Data Collection settings panels or via the LXE API functions. While the changed configuration is being read, the Scanner LED is solid amber. The scanner is not operational during the configuration update.

Important. When returning scanner or imager to factory default settings: After scanning the scanner-engine-specific barcode to reset all scanner parameters to factory default settings (i.e. Reset All, Set Factory Defaults, Default Settings, etc.), the next step is to open the Data Collection settings panel. Tap ok and close the Data Collection panel. This action will synchronize all scanner formats. Programming barcodes are available in the *Integrated Scanner Programming Guide*.

The MX7 Tecton has one integrated barcode scanner/imager port. Only one scan engine is installed at a time. Scan engines are not “hot swappable”. The MX7 Tecton may have one of three Symbol laser scan engines:

- Short Range Laser Scanner, 955I
- Low Power Scanner, 955E
- Multi-Range "LORAX" Laser, 1524ER

or a Hand Held Products 2D Area Imager, 5300.

Note: Low Power Scanner, 955E does not support aim mode. Any attempt to adjust the aiming beam using SE955 programming barcodes will fail. The Low Power scanner does not decode Codablock, Code93i, Matrix 2 of 5 or Telepen symbologies.

The integrated scan engine activates when the Scan button on the front of the MX7 Tecton is depressed or when the trigger on an installed trigger handle is depressed.

Symbol scanner:

Please refer to the *Integrated Scanner Programming Guide* for instruction on configuring specific scanner/imager parameters by using the MX7 Tecton to scan engine-specific setup barcodes in the guide.

HHP Imager:

Use the (Hand Held Properties) HHP Properties button on the Data Options tab and the Advanced button available on many of the individual Symbology Settings screen to configure the HHP Imager. There are no configuration barcodes for this imager.

Data Processing Overview

Barcode data processing involves several steps. Some steps may be skipped during the processing depending on user selections on the Symbology Settings panels. The steps are presented below in the order they are performed on the scanned data.

1. Scanned data is tested for a **code ID** and length (Min/Max). If it matches, it is processed per the rules in place for that symbology. If the scan does not meet the criteria for that symbology, it is processed based on the settings for All. If a code ID is not found, the barcode data is processed based on the settings for All.
2. If the symbology is **disabled**, the scan is rejected.
3. Strip **leading** data bytes unconditionally.
4. Strip **trailing** data bytes unconditionally.
5. Parse for, and strip if found, **Data Options** strings.
6. Replace any **control characters** with string, as configured.
7. Add **prefix** string to output buffer.
8. If **Code ID** is ***not*** stripped, add saved **code ID** from above to output buffer.
9. Add processed **data string** from above to output buffer.
10. Add **suffix string** to output buffer.
11. Add a terminating **NUL** to the output buffer, in case the data is processed as a string.
12. If key output is enabled, start the process to output keys. If control characters are encountered:

    - If Translate All is set, key is translated to CTRL + char, and output.
    - If Translate All is not set, and key has a valid VK code, key is output.
    - Otherwise, key is ignored (not output).

13. If key output is disabled, a windows message is broadcast to notify listening applications that data is available.

The manipulated data is ready to be read by applications.

Main Tab

Start | Settings | System | Data Collection | Main tab

Factory Default Settings	
Device 1	Disabled
Device 2	Internal
Device 3	Disabled
Send Key Messages	Enabled
Scan Mode - Continuous	Disabled
Scan Mode - Timeout between same symbol	1 second

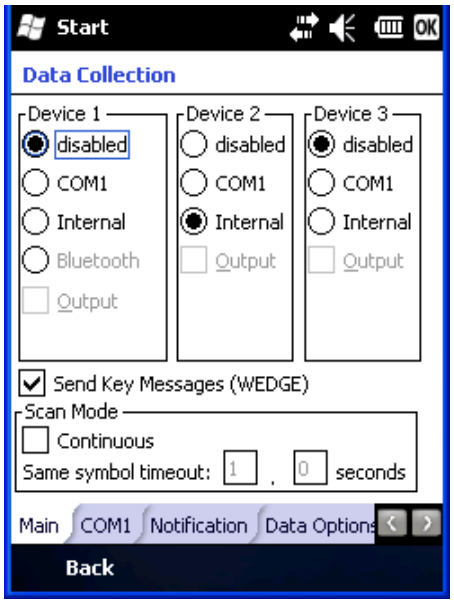
Device 1 – Internal. Radio button allows scanner input/output on Device 1 (scan key or trigger).

Device 2 – Output is enabled when COM1 is enabled on this port.

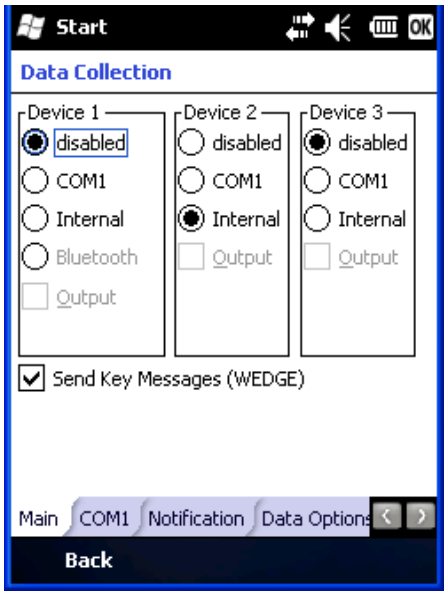
Device 3 – Output is enabled when COM1 is enabled on this port.

The Data Collection Wedge supports up to three concurrent data collection devices. For example, the internal scanner could be used to collect data at the same time a Bluetooth scanner is paired and/or a serial device is attached to COM1. The MX7 Tecton must be in a desktop cradle to use a tethered scanner.

Note: Since Internal is the default setting for Device 2, a Bluetooth scanner can be paired with the Wedge using LXEZPairing on Device 1 without disabling the internal scanner.



Device with integrated Symbol Scanner



Device with any other imager/scanner

Scanner Control - Main

Note: The Scan Mode (Continuous Scan) section is only present if the MX7 Tecton is equipped with a Symbol integrated scanner.

Adjust the settings and tap ok to save the changes. The changes take effect immediately.

Continuous Scan Mode

Start | Settings | System | Data Collection | Main

Continuous scan mode is only available if the MX7 Tecton is equipped with a Symbol scanner. Continuous scan mode draws power from the main battery every time a scan read/decode sequence is performed.

Enabling Continuous Scan Mode will ensure the laser is always on and decoding.

Caution: Laser beam is emitted continuously. Do not look or stare into the laser beam.

Set the Timeout between same symbol to a value sufficient to prevent the beeper from continuously beeping when a symbol is left in the scanner's field of view.

If trigger mode, power mode, or timeout between same symbol parameters are changed using external configuration barcodes in the *Integrated Scanner Programming Guide*, the operating system automatically restores the parameters to their programmed settings upon a cold boot and/or any change made in the Data Collection settings.

When the scanner is in continuous mode the trigger and scan buttons function as a scanner On/Off switch.

The scanner red LED will always be off in continuous mode. The audio beeps and green LED function the same as they do for normal trigger mode.

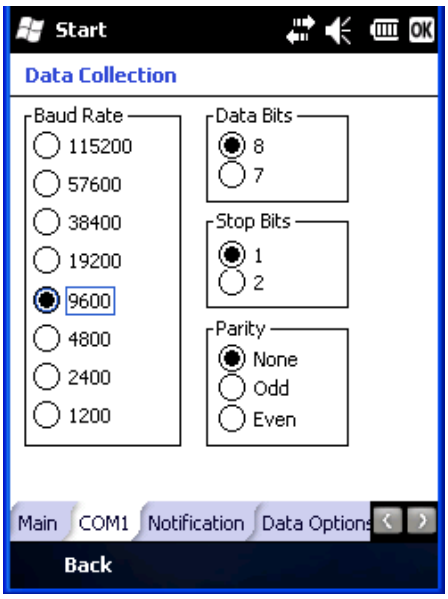
Switching to and from continuous and normal trigger modes is in effect after upon tapping the ok button and waiting for the amber scan LED to go out. A reboot is not required or necessary.

COM1 Tab

Start | Settings | System | Data Collection | COM1 tab

Factory Default Settings

Baud Rate	9600
Data Bits	8
Stop Bits	1
Parity	None



Scanner Control / COM1

Integrated laser scanner default values are 9600 Baud, 8 data bits, 1 stop bit and No parity.

If these values are changed, the default values are restored after a cold boot or after re-imaging the OS.

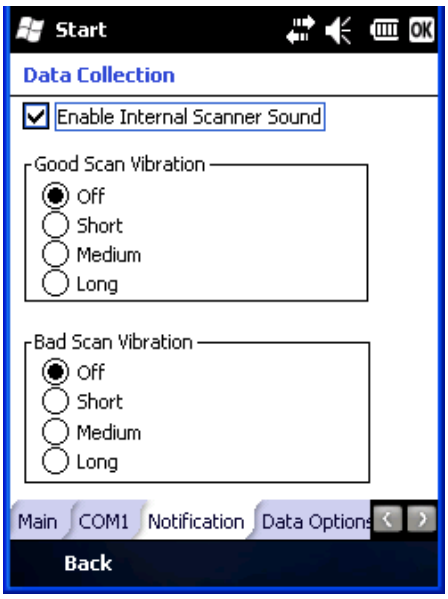
Note: COM1 does not support 5V switchable power on Pin 9 for tethered scanners.

Notification Tab

Start | Settings | System | Data Collection | Notification tab

Factory Default Settings

Enable Internal Scanner Sound	Enabled
Good Scan Vibration	Off
Bad Scan Vibration	Off



Scanner Control / COM1

This panel toggles internal scanner sounds on and off. Internal scanner sound, by default, is enabled.

Enable Good scan vibration or Bad scan vibration when a tactile response on a good scan or bad scan is desired. Scan sounds are accompanied by a tactile response when the internal scanner Sound parameter is enabled.

Enable short, medium or long duration for each selection (good scan and bad scan).

Adjust the settings and tap ok to save the changes. The changes take effect immediately.

Since the Data Collection Wedge uses the operating system interface to sound beeps, if the volume/vibrate icon is set to anything other than On, Wedge beeps do not sound. Wedge vibration is not affected by the System setting.

Speaker Volume/Vibrate Icon

Data Options Tab

Start | Settings | System | Data Collection | Data Options tab

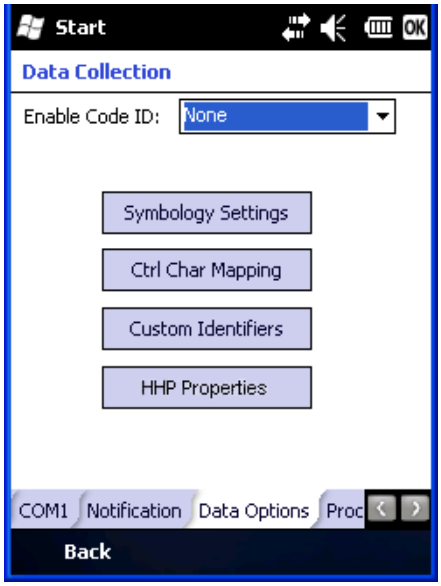
Barcode manipulation parameter settings on this tab are applied to the incoming data resulting from successful barcode scans sent to the MX7 Tecton for processing.

Note: The Data Options tab contains only those options available for one type of decoding engine.

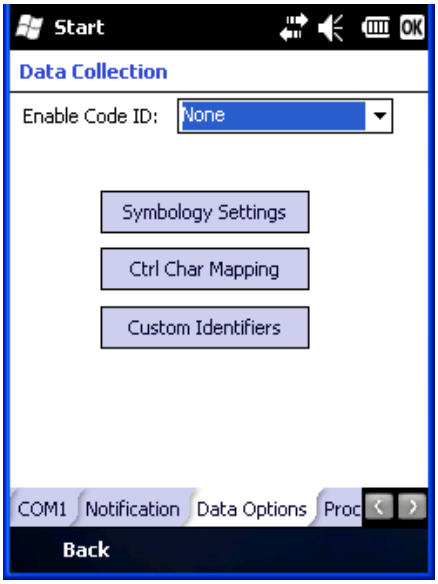
The Data Options tab contains several options to control barcode processing. Options include:

- Defining custom Code IDs
- Disable processing of specified barcode symbologies
- Rejecting barcode data that is too short or too long
- Stripping characters including Code ID, leading or trailing characters and specified barcode data strings
- Replacing control characters
- Adding a prefix and a suffix.

Factory Default Settings	
Enable Code ID	None



MX7 Tecton with an HHP imager



MX7 Tecton with any other imager/scanner

Data Options Tab

Note: The HHP Properties button is only present if the MX7 Tecton is equipped with a Hand Held Properties (HHP) imager.

Choose an option in the Enable Code ID drop-down box: None, AIM, Symbol, HHP or Custom.

For MX7 Tecton with Symbol

Data Collection Wedge can only enable or disable the processing of a barcode inside the Wedge software.

Enabling or disabling a specific barcode symbology at the scanner/imager is done manually using the configuration barcode in the *Integrated Scanner Programming Guide*.

For MX7 Tecton with HHP

Data Collection Wedge enables or disables the barcode at the imager as well as enabling or disabling the barcode processing in the Wedge software.

Enable Code ID

This parameter programs the internal scanner to transmit the specified Code ID and/or determines the type of barcode identifier being processed. If the scanner being configured is not an integrated scanner, the scanner driver expects that the setting has been programmed into the scanner externally, and that the data will be coming in with the specified Code ID attached.

Transmission of the Code ID is enabled at the scanner for all barcode symbologies, not for an individual symbology. Code ID is sent from the scanner so the scanner driver can discriminate between symbologies.

Options

None	Programs the internal scanner to disable transmission of a Code ID. The only entry in the Symbology popup list is All.
AIM	Programs the internal scanner to transmit the AIM ID with each barcode. The combo box in the Symbology panel is loaded with the known AIM ID symbologies for that platform, plus any configured Custom code IDs.
Symbol	Programs the internal scanner to transmit the Symbol ID with each barcode. The combo box in the Symbology panel is loaded with the known Symbol ID symbologies for that platform, plus any configured Custom Code IDs.
HHP	Programs the internal scanner to transmit the HHP ID with each barcode. The combo box in the Symbology panel is loaded with the known HHP ID symbologies for that platform, plus any custom Code IDs.
Custom	Does not change the scanner's Code ID transmission setting. The combo box in the Symbology panel is loaded with any configured Custom Code IDs.

Notes

- When Strip: Code ID (see Symbology panel) is not enabled, the code ID is sent as part of the barcode data to an application.
- When Strip: Code ID (see Symbology panel) is enabled, the entire Code ID string is stripped (i.e. treated as a Code ID).
- UPC/EAN Codes only: The Code ID for supplemental barcodes is not stripped.
- When Enable Code ID is set to AIM, Symbol or HHP, Custom Code IDs appear at the end of the list of standard Code IDs.
- When Enable Code ID is set to Custom, Custom Code IDs replace the list of standard Code IDs.
- Symbol equipped devices are configured using configuration barcodes, When Enable Code ID is set to Custom, AIM or Symbol Code IDs must be added to the end of the Custom Code ID. For example, if a Custom Code ID 'AAA' is created to be read in combination with an AIM ID for Code 39 ']A1', the Custom Code ID must be entered with the AIM ID code first then the Custom Code ID :]A1AAA.
- When Enable Code ID is set to None, Code IDs are ignored.
- Custom symbologies appear at the end of the list in the Symbology dialog, but will be processed at the beginning of the list in the scanner driver. This allows custom IDs, based on actual code IDs, to be processed before the Code ID.
- The external scanner operation cannot be controlled by the MX7 Tecton scanner driver; therefore, a 'good' beep may be sounded from the external scanner even if a barcode from an external scanner is rejected because of the configuration specified. The MX7 Tecton will still generate a 'bad' scan beep, to indicate the barcode has been rejected.

Buttons

Symbology Settings	Individually enable or disable a barcode from being scanned, set the minimum and maximum size barcode to accept, strip Code ID, strip data from the beginning or end of a barcode, or (based on configurable Barcode Data) add a prefix or suffix to a barcode before transmission.
Ctrl Char Mapping	Define the operations the Wedge performs on control characters (values less than 0x20) embedded in barcodes.
Custom Identifiers	Defines an identifier that is at the beginning of barcode data which acts as a Code ID. After a Custom Identifier is defined, Symbology Settings can be defined for the identifier just like standard Code IDs.
HHP Properties	Set properties for an HHP imager including centering, mode, range, AIM timer and light behavior. Note that the HHP Properties button is only present if the MX7 Tecton is equipped with an HHP imager.

Symbology Settings

Start | Settings | System | Data Collection | Symbology Settings button

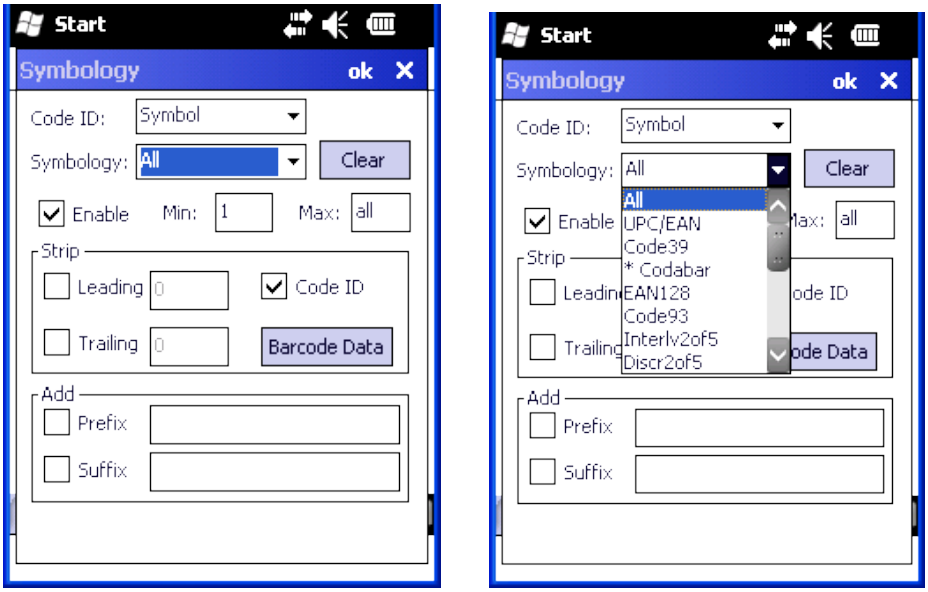
The Symbology selected in the Symbology drop down list defines the symbology for which the data is being configured. The features available on the Symbology panel include the ability to

- individually enable or disable a barcode from scanning,
- set the minimum and maximum size barcode to accept,
- strip Code ID,
- strip data from the beginning or end of a barcode,
- or (based on configurable Barcode Data) add a prefix or suffix to a barcode.

The Code ID drop down box only filters the available symbologies in the Symbology drop down box by the selected Code ID. This Code ID box does not enable or disable the Code ID as that function is controlled by the Enable Code ID box on the Data Options tab.

The Symbology drop down box contains all symbologies **supported by the device selected on the Main tab**. An asterisk appears in front of symbologies that have already been configured or have been modified from the default value.

Each time a Symbology is changed, the settings are saved as soon as ok is clicked. Settings are also saved when a new Symbology is selected from the Symbology drop down list.



Symbology Settings

Clear Button

This button will erase any programmed overrides, returning to the default settings for the selected symbology.

If Clear is pressed when All is selected as the symbology, a confirmation dialog appears. Tap the Yes button and all symbologies are reset to their factory defaults, and all star (*) indications are removed from the list of Symbologies.

Advanced Button

If there are advanced configuration options for the selected symbology, an Advanced button is displayed in the lower right corner of the panel. Not all barcode symbologies have configuration parameters so the Advanced button is not present for all symbologies.

Because the HHP imager does not support configuration barcodes, the Advanced function allows configuration parameters to be set for many of the supported barcodes.

Processing Order

The order in which these settings are processed are:

- Min / Max
- Code ID
- Leading / Trailing
- Barcode Data
- Prefix / Suffix

*Note: When **Enable Code ID** is set to **None** on the Data Options tab and when **All** is selected in the Symbology field, **Enable** and **Strip Code ID** on the Symbology panel are grayed and the user is not allowed to change them, to prevent deactivating the scanner completely.*

When **All** is selected in the Symbology field and the settings are changed, the settings in this dialog become the defaults, used unless overwritten by the settings for individual symbologies. This is also true for Custom IDs, where the code IDs to be stripped are specified by the user.

*Note: In Custom mode on the Data Options tab, any Code IDs **not** specified by the user will not be stripped, because they will not be recognized as Code IDs.*

If a specific symbology's settings have been configured, a star (*) will appear next to it in the Symbology drop down box, so the user can tell which symbologies have been modified from their defaults.

If a particular symbology has been configured, the entire set of parameters from that symbologies screen are in effect for that symbology. In other words, either the settings for the configured symbology will be used, or the default settings are used, not a combination of the two.

If a symbology has not been configured (does not have an * next to it) the settings for **All** are used which is not necessarily the default.

Enable, Min, Max

Enable

This checkbox enables (checked) or disables (unchecked) the symbology field.

The scanner driver searches the beginning of the barcode data for the type of ID specified in the Data Options tab -- Enable Code ID field plus any custom identifiers.

When a code ID match is found as the scanner driver processes incoming barcode data, if the symbology is disabled, the barcode is rejected. Otherwise, the other settings in the dialog are applied and the barcode is processed.

If the symbology is disabled, all other fields on this dialog are dimmed.

If there ***are*** *customized settings*, uncheck the Enable checkbox for the All symbology. This results in disabling all symbologies *except* the customized ones.

Min

This field specifies the minimum length that the barcode data (not including Code ID) must meet to be processed.

Any barcode scanned that is less than the number of characters specified in the Min field is rejected. The default for this field is 1.

Max

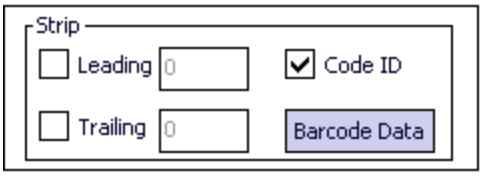
This field specifies the maximum length that the barcode data (not including Code ID) can be processed. Any barcode scanned that has more characters than specified in the Max field is rejected. The default for this field is All (9999).

If the value entered is greater than the maximum value allowed for that symbology, the maximum valid length is used instead.

Strip Leading/Trailing Control

Start | Settings | System | Data Collection | Symbology button

This group of controls determines what data is removed from the collected data before the data is buffered for the application. When all values are set, Code ID takes precedence over Leading and Trailing; Barcode Data stripping is performed last. Stripping occurs before the Prefix and Suffix are added, so does not affect them.



Symbology / Strip Leading / Trailing

If the total number of characters being stripped is greater than the number of characters in the collected data, it becomes a zero byte data string.

If, in addition, Strip Code ID is enabled, and no prefix or suffix is configured, the processing will return a zero-byte data packet, which will be rejected.

The operation of each type of stripping is defined below:

Leading

This strips the number of characters specified from the beginning of the collected data (not including Code ID). The data is stripped unconditionally. This action is disabled by default.

Trailing

This strips the number of characters specified from the end of the collected data (not including Code ID). The data is stripped unconditionally. This action is disabled by default.

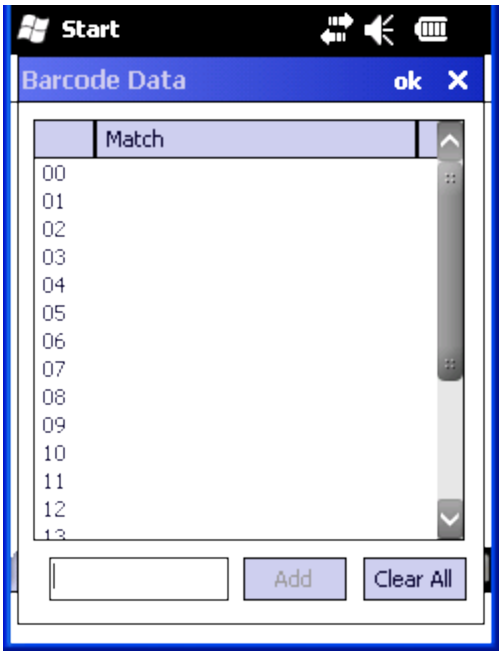
Code ID

Strips the Code ID based on the type code ID specified in the Enable Code ID field in the Data Options tab. By default, Code ID stripping is enabled for every symbology (meaning code IDs will be stripped, unless specifically configured otherwise).

Barcode Data Match List

Barcode Data Panel

This panel is used to strip data that matches the entry in the Match list from the barcode. Enter the data to be stripped in the text box and tap the Insert or Add button. The entry is added to the Match list.



To remove an entry from the Match list, highlight the entry in the list and tap the Remove button.

Tap ok to store any additions, deletions or changes.

Barcode Data Match Edit Buttons

Add	Entering data into the text entry box enables the Add button. Tap the **Add** button and the data is added to the next empty location in the Custom ID list.
Insert	Tap on an empty line in the Custom ID list. The **Add** button changes to **Insert**. Enter data into both the Name and ID Code fields and tap the Insert button. The data is added to the selected line in the Custom IDs list.
Edit	Double tap on the item to edit. Its values are copied to the text boxes for editing. The **Add** button changes to **Replace**. When Replace is tapped, the values for the current item in the list are updated.
Clear All	When no item in the Custom IDs list is selected, tapping the Clear All button clears the Custom ID list and any text written (and not yet added or inserted) in the Name and ID Code text boxes.
Remove	The **Clear All** button changes to a **Remove** button when an item in the Custom IDs list is selected. Tap the desired line item and then tap the Remove button to delete it. Line items are Removed one at a time. Contents of the text box fields are cleared at the same time.

Notes

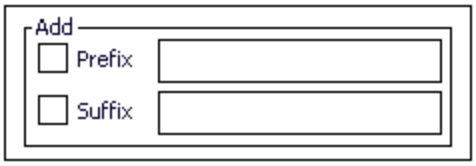
- **Prefix** and **Suffix** data is always added on after stripping is complete, and is not affected by any stripping settings.
- If the stripping configuration results in a 0 length barcode, a good beep will still be emitted, since barcode data was read from the scanner.

Match List Rules

The data in the match list is processed by the rules listed below:

- Strings in the list will be searched in the order they appear in the list. If the list contains ***ABC*** and ***AB***, in that order, incoming data with ***ABC*** will match first, and the ***AB*** will have no effect.
- When a match between the first characters of the barcode and a string from the list is found, that string is stripped from the barcode data.
- Processing the list terminates when a match is found or when the end of the list is reached.
- If the wildcard ***** is not specified, the string is assumed to strip from the beginning of the barcode data. The string ***ABC**** strips off the prefix ***ABC***. The string ****XYZ*** will strip off the suffix ***XYZ***. The string ***ABC*XYZ*** will strip both prefix and suffix together. More than one * in a configuration string is not allowed. (The User Interface will not prevent it, but results would not be as expected, as only the first * is used in parsing to match the string.)
- The question mark wildcard ***?*** may be used to match any single character in the incoming data. For example, the data AB?D will match ABCD, ABcD, or AB0D, but not ABDE.
- The data collected is saved per symbology configured. The Symbology selected in the Symbologies dialog defines the symbology for which the data is being configured.
- Note that the Code ID (if any are configured) is ignored by this dialog, regardless of the setting of **Strip: Code ID** in the Symbologies dialog. According to the sequence of events (specified above), the Code ID must not be included in the barcode data being matched, because when the matching test occurs, the Code ID has already been stripped. If Strip Code ID is disabled, then the barcode data to match must include the Code ID. If Strip Code ID is enabled, the data should not include the Code ID since it has already been stripped.

Add Prefix/Suffix Control



Symbology / Prefix and Suffix Control

Note: Non-ASCII equivalent keys in Key Message mode are unavailable in this option. Non-ASCII equivalent keys include the function keys (e.g. <F1>), arrow keys, Page up, Page down, Home, and End.

Use this option to specify a string of text, hex values or hat encoded values to be added to the beginning (prefix) or the end (suffix) of the barcode data. Up to 19 characters can be included in the string. The string can include any character from the keyboard plus characters specified by hex equivalent or entering in hat encoding. Please see "Hat Encoding" for a list of characters with their hex and hat-encoded values.

Using the Escape function allows entering of literal hex and hat values.

Add Prefix

To enable a prefix, check the Prefix checkbox and enter the desired string in the textbox. The default is disabled (unchecked) with a blank text string.

When barcode data is processed, the Prefix string is sent to the output buffer before any other data. Because all stripping operations have already occurred, stripping settings do not affect the prefix.

The prefix is added to the output buffer for the Symbology selected from the pulldown list. If 'All' is selected, the prefix is added for any symbology that has not been specifically configured.

Add Suffix

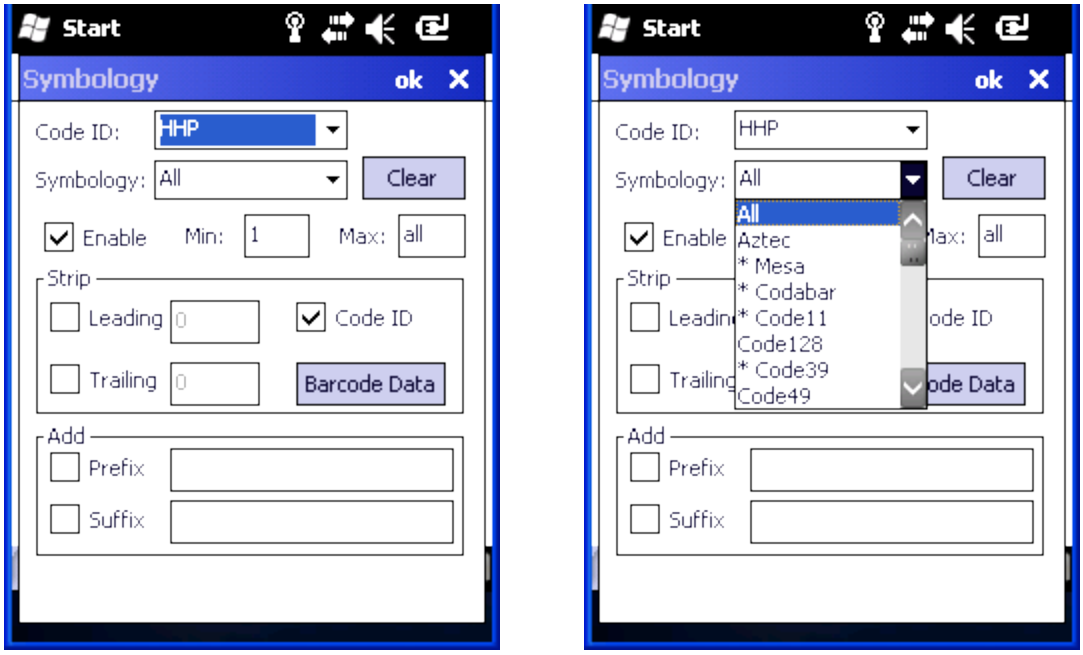
To enable a suffix, check the Suffix checkbox and enter the desired string in the textbox. The default is disabled (unchecked) with a blank text string.

When barcode data is processed, the Suffix string is sent to the output buffer after the barcode data. Because all stripping operations have already occurred, stripping settings do not affect the suffix.

The suffix is added to the output buffer for the Symbology selected from the pulldown list. If 'All' is selected, the suffix is added for any symbology that has not been specifically configured.

Advanced (HHP Only)

The Advanced button is only available if an HHP Imager is enabled. Because the HHP imager does not support configuration barcodes, the Advanced function allows configuration parameters to be set for many of the supported barcodes.



Symbology Settings for HHP

If there are advanced configuration options for the selected symbology, an Advanced button is displayed in the lower right corner of the panel. Not all barcode symbologies have configuration parameters so the Advanced button is not present for all symbologies.

The chart below lists the symbologies and advanced configuration parameters available for that symbology. If a symbology is not listed, it does not have any advanced configuration parameters.

Codabar

Check Character

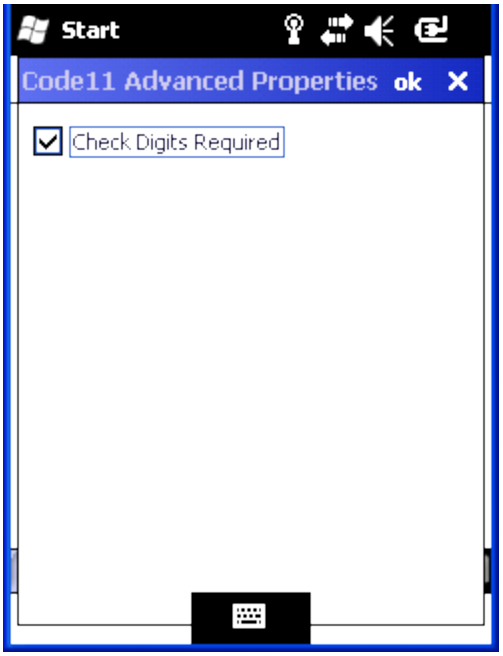
Required – When enabled, the check character is required. Default is disabled.

Transmit – When enabled, the check character is transmitted. Default is disabled.

Start / Stop Character

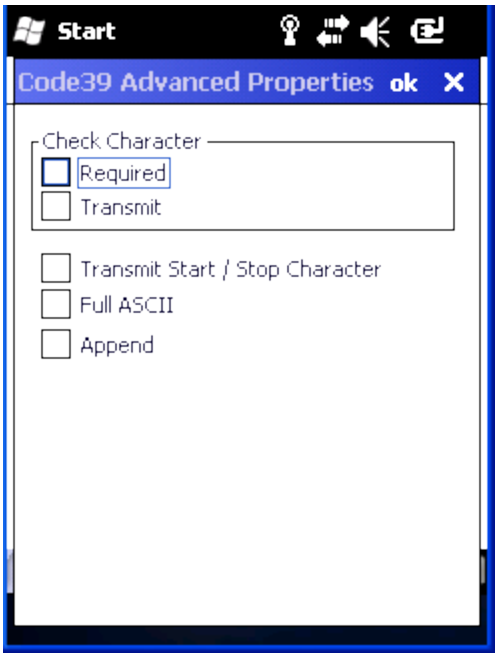
Transmit – When enabled, the start / stop characters are transmitted. Default is disabled.

Code 11



Check Digits Required – When enabled, only barcodes with two check digits are decoded. The default is disabled.

Code 39



Check Character

Required – When enabled, the check character is required. Default is disabled.

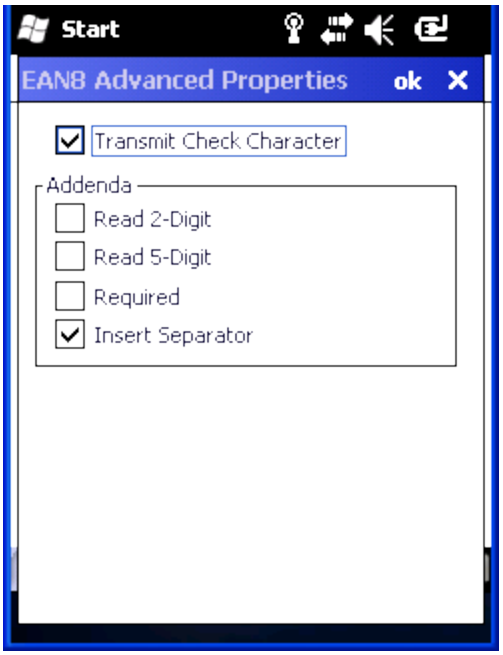
Transmit – When enabled, the check character is transmitted. Default is disabled.

Transmit Start / Stop Character – When enabled, the start / stop characters are transmitted. Default is disabled.

Full ASCII – When enabled, full ASCII interpretation is used. Default is disabled.

Append – When enabled, append and buffer codes that start with a space. Default is disabled.

EAN 8



Transmit Check Character – When enabled, transmit the check character. Default is enabled.

Addenda

Read 2-Digit – When enabled, transmit the 2 digit addenda. Default is disabled.

Read 5-Digit – When enable, transmit the 5 digit addenda. Default is disabled.

Required – When enabled, only transmit barcodes with a 2 or 5 digit addenda. Default is disabled.

Insert Separator – When enabled, insert a space between the code and addenda. Default is enabled.

EAN 13

Transmit Check Character – When enabled, transmit the check character. Default is disabled.

Addenda

Read 2-Digit – When enabled, transmit the 2 digit addenda. Default is disabled.

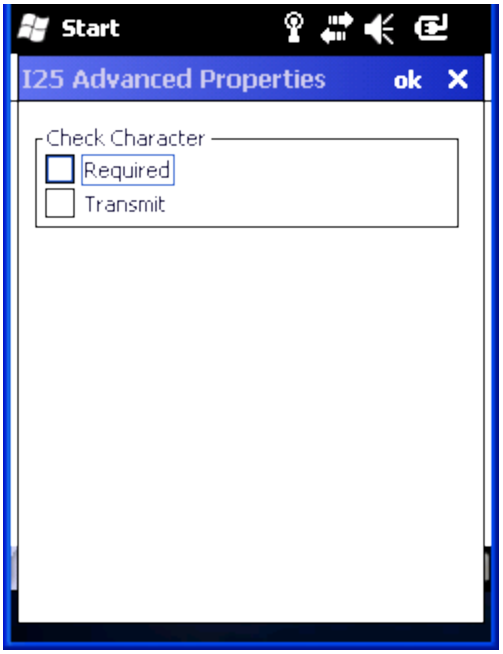
Read 5-Digit – When enable, transmit the 5 digit addenda. Default is disabled.

Required – When enabled, only transmit barcodes with a 2 or 5 digit addenda. Default is disabled.

Insert Separator – When enabled, insert a space between the code and addenda. Default is disabled.

Note: A UPCA decoding algorithm will also decode EAN 13 labels. For correct operation, either disable the UPCA symbology when using EAN 13 labels or configure the UPCA settings to match the EAN 13 settings.

Interleaved 2 of 5

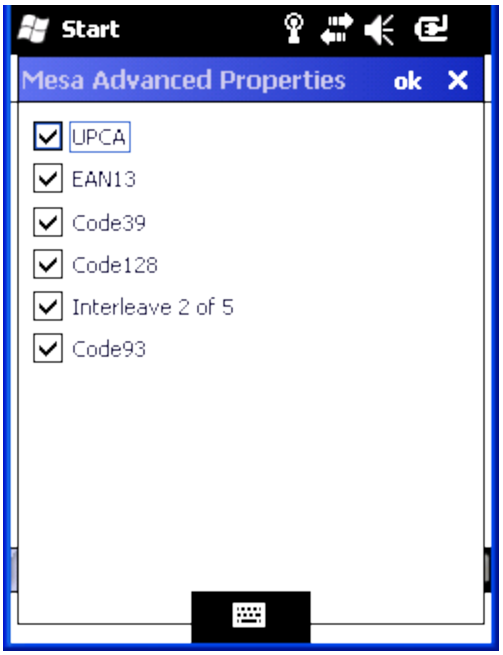


Check Character

Required – When enabled, the check character is required. Default is disabled.

Transmit – When enabled, the check character is transmitted. Default is disabled.

Mesa



UPCA – When enabled, decode UPCA Mesa. Default is disabled.

EAN13 – When enabled, decode EAN 13 Mesa. Default is disabled.

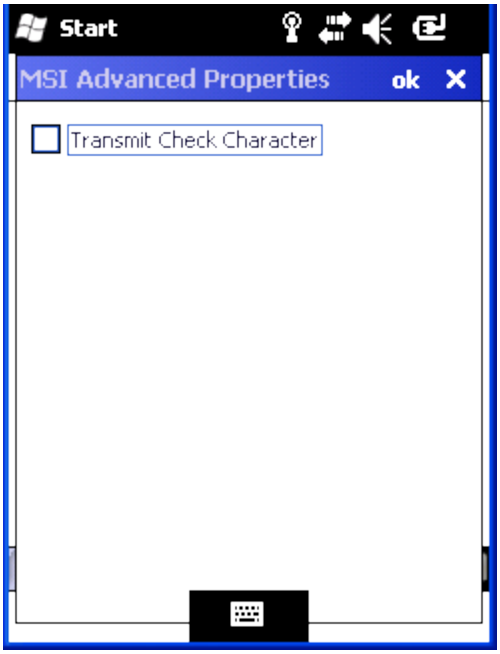
Code39 – When enabled, decode Code 39 Mesa. Default is disabled.

Code128 – When enabled, decode Code 128 Mesa. Default is disabled.

Interleaved 2 of 5 – When enabled, decode Interleaved 2 of 5 Mesa. Default is disabled.

Code93 – When enabled, decode Code 93 Mesa. Default is disabled.

MSI Plessy



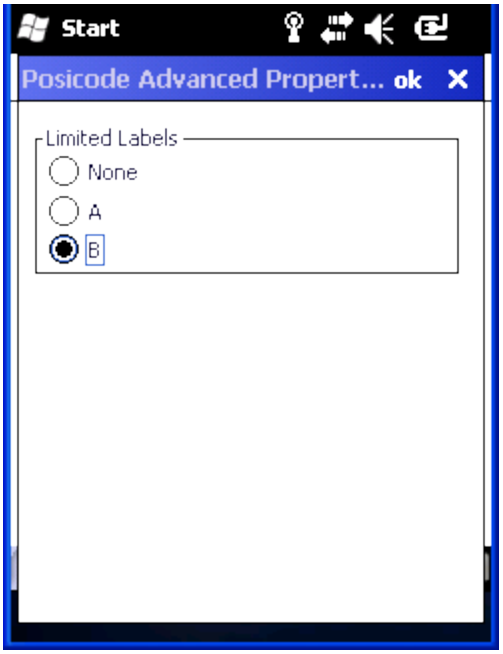
Transmit Check Character – When enabled, transmit the check character. Default is enabled.

OCR See "OCR Symbology" on page 119

Planet (PostaL AlphaNumeric Encoding Technique)

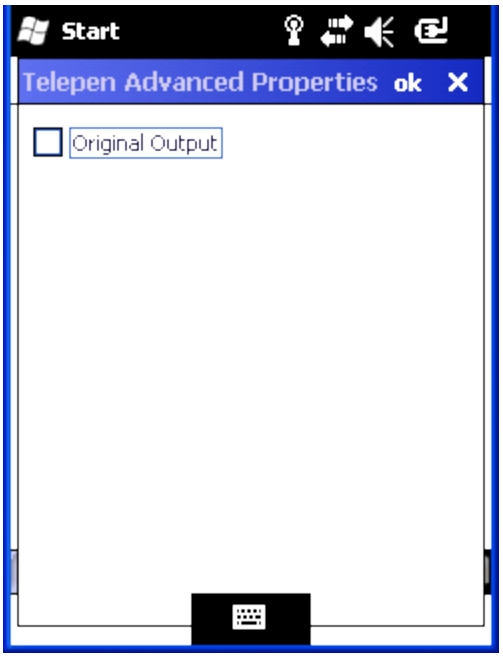
Transmit Check Character – When enabled, transmit the check character. Default is disabled.

Posicode



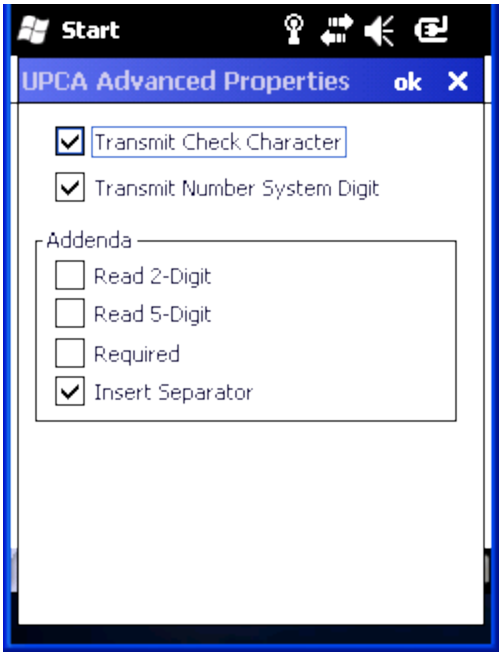
Limited Labels – Select the type of Posicode Limited labels:
None
A – Posicode Limited A
B – Posicode Limited B

Telepen



Original Output – When enabled, output is Original Telepen. When disabled, output is AIM. Default is enabled.

UPCA



Transmit Check Character – When enabled, transmit the check character. Default is enabled

Transmit Number System Digit – When enabled, transmit the number system digit. Default is enabled.

Addenda

Read 2-Digit – When enabled, transmit the 2 digit addenda. Default is disabled.

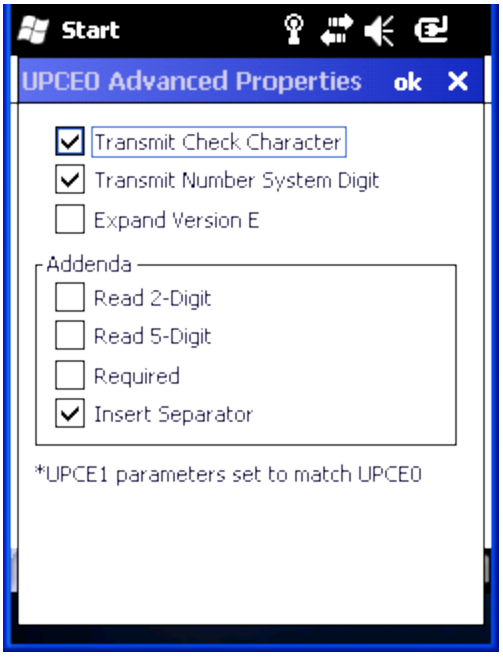
Read 5-Digit – When enable, transmit the 5 digit addenda. Default is disabled.

Required – When enabled, only transmit barcodes with a 2 or 5 digit addenda. Default is disabled.

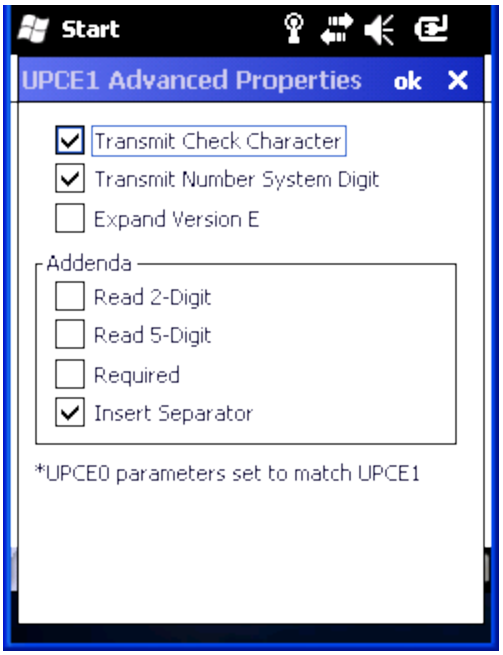
Insert Separator – When enabled, insert a space between the code and addenda. Default is enabled.

Note: An EAN 13 decoding algorithm will also decode UPCA labels. For correct operation, either disable the EAN 13 symbology when using UPCA labels or configure the EAN 13 settings to match the UPCA settings.

UPCE0



UPCE1



Note: The UPCE0 and UPCE1 parameters are always set to match each other. Therefore if a change is made to a parameter to either the EPCE0 or UPCE1 Advanced Properties that same change is automatically made to the Advanced Properties for the other symbology.

Note: UPCE0 and UPCE1 are enabled as the same symbology at the scanner. Therefore, the only way for UPCE1 configuration to be used is if UPCE0 is disabled. When UPCE0 is disabled, it is scanned by the imager but rejected by Data Collection Wedge.

Transmit Check Character – When enabled, transmit the check character. Default is enabled

Transmit number System Digit – When enabled, transmit the number system digit. Default is enabled.

Expand Version E – When enabled, expand version E to 12-digit UPCA format. Default is disabled.

Addenda

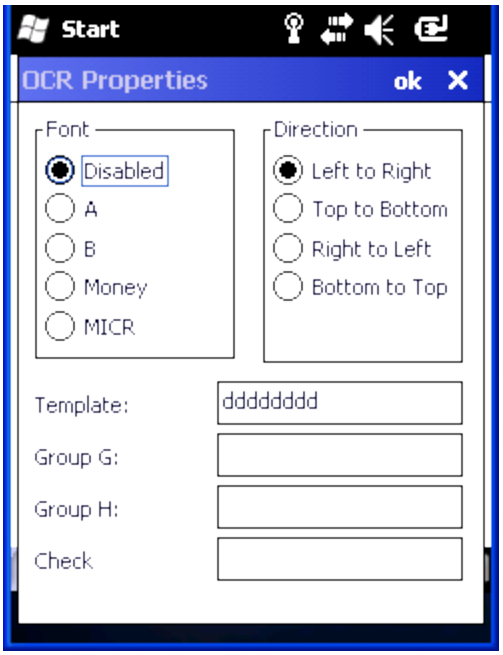
Read 2-Digit – When enabled, transmit the 2 digit addenda. Default is disabled.

Read 5-Digit – When enable, transmit the 5 digit addenda. Default is disabled.

Required – When enabled, only transmit barcodes with a 2 or 5 digit addenda. Default is enabled.

Insert Separator – When enabled, insert a space between the code and addenda. Default is disabled.

OCR Symbology



Font – Font selection:
Disabled
A = OCR A
B = OCR B
Money = OCR Money
MICR = Magnetic Ink Character Recognition
Default is disabled.

Direction – Decoder reads OCR fonts in any direction, but setting direction parameter correctly can increase decoding speed:
Left to Right
Top to Bottom
Right to Left
Bottom to Top
Default is Left to Right.

Template – Template length must match the length of OCR string to be read. Valid template selections are:
a - alphanumeric character (digit or letter)
c - check character
d - digits from 0 to 9
e - any character
g - any character specified in group G
h - any character specified in group H
l - alphabetic letter
r - delimits a row
t - delimits multiple templates
All characters are transmitted as is except for the selected template. Default is dddddddd.

Group G – Null terminated string defines the set of characters in group G. The default is null.

Group H – Null terminated string defines the set of characters in group H. The default is null.

Check – Enter the string constant 0123456789 for modulo10 checksums and the string constant 0123456789ABCDEFGHIJKLMNOPQRSTUVWXYZ for modulo36 checksums.
The default is null.

OCR Template Examples

1. To read a combination of 6 alpha and numeric characters use the following template:
   aaaaaa
2. To read the same string with a modulo 10 check digit in the 7th character position, use the following template:
   aaaaaac
   Then enter 0123456789 for the Check parameter.
3. To read either a string of 6 alphabetic letters OR a string of 8 numeric digits, use this template:
   lllllltdddddddd
   Note the use of the “t” to separate the first template from the second.
4. To read multiple rows of OCR data as shown below:
   123450
   ABCDEF
   Either of the following templates could be used:
   ddddddrllllll or aaaaaaraaaaaa
   Note the use of the “r” to define the position of the second row.

OCR Checksum Calculation

The following explains how the checksum is generated for the OCR barcode:

Modulo 10:

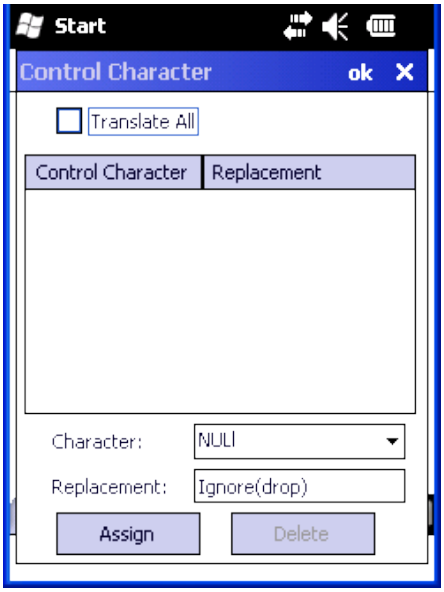
1. Add the characters in the string (not including the checksum character). Valid values are 0 – 9 for modulo 10.
2. Subtract 10 from the sum obtained above. Continue subtracting 10 until the remainder is less than 10.
3. The remainder obtained above is the checksum. Enter this digit in the checksum position.

Modulo 36

1. Add the characters in the string (not including the checksum character). Digit / Alpha values are defined as follows for modulo 36: 0 – 9 = 0 – 9; A = 10, B = 11, … Z = 25
2. Subtract 36 from the sum obtained above. Continue subtracting 36 until the remainder is less than 36.
3. Subtract the remainder obtained above from 36. The value obtained is the checksum. Enter this character in the check-sum position.

Ctrl Char Mapping

The Ctrl Char Mapping button activates a dialog to define the operations the Data Collection Wedge performs on control characters (values less than 0x20) embedded in barcodes. Control characters can be replaced with user-defined text which can include hat encoded or hex encoded values. In key message mode, control characters can also be translated to their control code equivalent key sequences.



Ctrl Char Mapping

Translate All

When Translate All is checked, unprintable ASCII characters (characters below 20H) in scanned barcodes are assigned to their appropriate CTRL code sequence when the barcodes are sent in Character mode.

The wedge provides a one-to-one mapping of control characters to their equivalent control+character sequence of keystrokes. If control characters are translated, the translation is performed on the barcode data, prefix, and suffix before the keystrokes are simulated.

Translate All	This option is grayed unless the user has Key Message mode (on the Main tab) selected. In Key Message mode, when this option is enabled, control characters embedded in a scanned barcode are translated to their equivalent 'control' key keystroke sequence (13 [0x0d] is translated to Control+M keystrokes as if the user pressed the CTRL, SHIFT, and m keys on the keypad). Additionally, when Translate All is disabled, any control code which has a keystroke equivalent (enter, tab, escape, backspace, etc.) is output as a keystroke. Any control code without a keystroke equivalent is dropped.
Character	This is a drop down combo box that contains the control character name. Refer to the Character drop down box for the list of control characters and their names. When a character name is selected from the drop down box, the default text Ignore (drop) is shown and highlighted in the Replacement edit control. Ignore (drop) is highlighted so the user can type a replacement if the control character is not being ignored. Once the user types any character into the Replacement edit control, reselecting the character from the Character drop down box redisplays the default Ignore (drop) in the Replacement edit control.
Replacement	The edit control where the user types the characters to be assigned as the replacement of the control character. Replacements for a control character are assigned by selecting the appropriate character from the Character drop down box, typing the replacement in the Replacement edit control (according to the formats defined above) and then selecting Assign. The assigned replacement is then added to the list box above the Assign button. For example, if 'Carriage Return' is replaced by Line Feed (by specifying '^J' or '0x0A') in the configuration, the value 0x0d received in any scanned barcode (or defined in the prefix or suffix) will be replaced with the value 0x0a. The Wedge then sends Ctrl+J to the receiving application, rather than Ctrl+M.
List Box	The list box shows all user-defined control characters and their assigned replacements. All replacements are enclosed in single quotes to delimit white space that has been assigned.
Delete	This button is grayed unless an entry in the list box is highlighted. When an entry (or entries) is highlighted, and Delete is selected, the highlighted material is deleted from the list box.

Custom Identifiers

Code IDs can be defined by the user. This allows processing parameters to be configured for barcodes that do not use the standard AIM or Symbol IDs or for barcodes that have data embedded at the beginning of the data that acts like a Code ID.

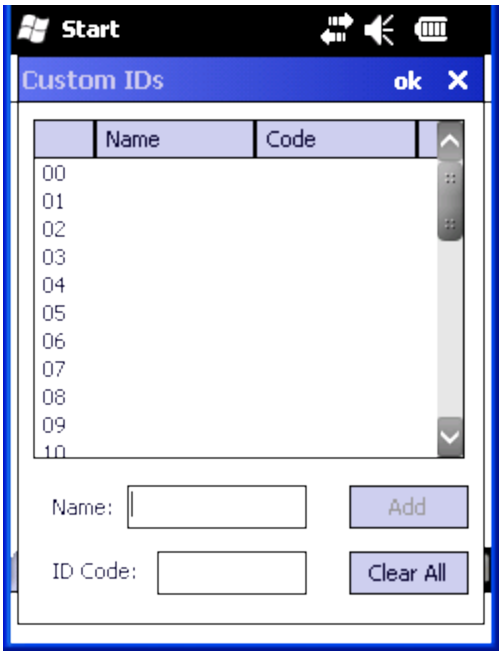
These are called “custom” Code IDs and are included in the Symbology drop down box in the Symbology dialog, unless Enable Code ID is set to None. When the custom Code ID is found in a barcode, the configuration specified for the custom Code ID is applied to the barcode data. The dialog below allows the custom Code IDs to be configured.

It is intended that custom code IDs are used to supplement the list of standard code IDs (if Enable Code ID is set to AIM or Symbol), or to replace the list of standard code IDs (if Enable Code ID is set to Custom).

When Enable Code ID is set to None, custom code IDs are ignored.

Note: Custom symbologies will appear at the end of the list in the Symbology dialog, and are processed at the beginning of the list in the scanner driver itself. This allows custom IDs based on actual code IDs to be processed before the code ID itself.

Note: When Strip: Code ID is enabled, the entire custom Code ID string is stripped (i.e., treated as a Code ID).



Custom Identifiers

After adding, changing and removing items from the Custom IDs list, tap the ok button to save changes and return to the Barcode panel.

Parameters

Name text box

Name is the descriptor that is used to identify the custom Code ID. Names must be unique from each other; however, the Name and ID Code may have the same value. Name is used in the Symbology drop down box to identify the custom Code ID in a user-friendly manner. Both Name and ID Code must be specified in order to add a custom Code ID to the Custom IDs list.

ID Code text box

ID Code defines the data at the beginning of a barcode that acts as an identifier (the actual Code ID). Both Name and ID Code must be specified in order to add a custom Code ID to the Custom IDs list.

Buttons

Add	Entering data into both the Name and ID Code fields enables the Add button. Tap the Add button and the data is added to the next empty location in the Custom ID list.
Insert	Tap on an empty line in the Custom ID list. The Add button changes to Insert. Enter data into both the Name and ID Code fields and tap the Insert button. The data is added to the selected line in the Custom IDs list.
Edit	Double tap on the item to edit. Its values are copied to the text boxes for editing. The Add button changes to Replace. When Replace is tapped, the values for the current item in the list are updated.
Clear All	When no item in the Custom IDs list is selected, tapping the Clear All button clears the Custom ID list and any text written (and not yet added or inserted) in the Name and ID Code text boxes.
Remove	The Clear All button changes to a Remove button when an item in the Custom IDs list is selected. Tap the desired line item and then tap the Remove button to delete it. Line items are Removed one at a time. Contents of the text box fields are cleared at the same time.

Control Code Replacement Examples

Configuration data	Translation	Example Control Character	Example configuration	Translated data
Ignore(drop)	The control character is discarded from the barcode data, prefix and suffix	ESCape	'Ignore (drop)'	0x1B in the barcode is discarded.
Printable text	Text is substituted for Control Character.	Start of TeXt	'STX'	0x02 in a barcode is converted to the text 'STX'.
Hat-encoded text	The hat-encoded text is translated to the equivalent hex value.	Carriage Return	'^M'	Value 0x0d in a barcode is converted to the value 0x0d.
Escaped hat-encoded text	The hat-encoding to pass thru to the application.	Horizontal Tab	'\^I'	Value 0x09 in a barcode is converted to the text '^I'.
Hex-encoded text	The hex-encoded text is translated to the equivalent hex value.	Carriage Return	'0x0A'	Value 0x0D in a barcode is converted to a value 0x0A.
Escaped hex-encoded text	The hex-encoding to pass thru to the application.	Vertical Tab	'\0x0A' or '0\x0A'	Value 0x0C is a barcode is converted to text '0x0A'

Barcode Processing Examples

The following table shows examples of stripping and prefix/suffix configurations. The examples assume that the scanner is configured to transmit an AIM identifier.

	Symbology				
	All	**EAN-128 (]C1)**	**EAN-13 (]E0)**	**Intrlv 2 of 5 (]I0)**	**Code93**
Enable	Enabled	Enabled	Enabled	Enabled	Disabled
Min length	1	4	1	1	
Max length	all	all	all	10	
Strip Code ID	Enabled	Enabled	Disabled	Enabled	
Strip Leading	3	0	3	3	
Strip Barcode Data		'*123'	'1*'	'456'	
Strip Trailing	0	0	3	3	
Prefix	'aaa'	'bbb'	'ccc'	'ddd'	
Suffix	'www'	'xxx'	'yyy'	'zzz'	

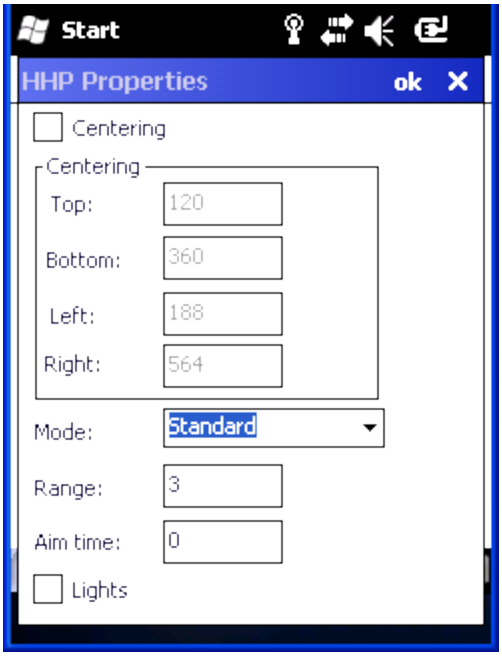
Provided that the wedge is configured with the above table, following are examples of scanned barcode data and results of these manipulations.

Barcode Symbology	Raw Scanner Data	Resulting Data
EAN-128	]C11234567890123	bbb1234567890xxx
EAN-128	]C111234567890123	bbb11234567890xxx
EAN-128	]C1123	< rejected > (too short)
EAN-13	]E01234567890987	ccc]E04567890yyy
EAN-13	]E012312345678909 87	ccc]E0234567890yyy
EAN-13	]E01234	ccc]E0yyy
I2/5	]I044445678909876543 21	< rejected > (too long)
I2/5	]I04444567890123	ddd7890zzz
I2/5	]I0444	dddzzz
I2/5	]I022245622	ddd45zzz
Code-93	]G0123456	< rejected > (disabled)
Code-93	]G0444444	< rejected > (disabled)
Code-39	]A01234567890	aaa4567890www
Code-39 full ASCII	]A41231234567890	aaa1234567890www
Code-39	]A4	< rejected > (too short)

Rejected barcodes generate a bad scan beep. In some cases, the receipt of data from the scanner triggers a good scan beep (from the external scanner), and then the rejection of scanned barcode data by the processing causes a bad scan beep on the same data.

HHP Properties

When the MX7 Tecton is equipped with an HHP imager, this option is used to configure imager parameters.



HHP Properties

Option	Action
Centering	The centering feature is used to allow the user to accurately scan a selected barcode among a group of barcodes that are located closely together. When centering is turned on, the imager will only decode barcodes that intersect the centering window defined by the user. The centering window must intersect the center of the barcode. The default centering settings define a 60 pixel square area in the center of the imager's field of view. The default is disabled. When enabled, the following parameters may be entered. **Top** Valid:0 – 239 Default:120 **Bottom** Valid:240 – 479 Default:360 **Left** Valid:0 – 319 Default:188 **Right** Valid:320 – 639 Default:564

Option	Action
Mode	In *Standard mode* the imager will decode both linear and 2-D symbologies. In *Aggressive Linear Decode mode* the imager will only read linear symbologies in this mode, but decoding these is faster and more accurate than Standard Mode. In *Quick Omni mode* the imager searches for a barcode in a reduced field located around the center of the image. Decoding is faster in this mode, but the user must center the aiming line over the barcode to be read. Both linear and 2-D symbologies can be read in this mode. The default is Standard.
Range	Set the linear range. Valid:1 – 6 Default:3 A value of 1 specifies that the linear range that is searched for a readable label is a tight vertical range near the aimer. A value of 6 specifies that the entire height of the image is to be searched.
AIM	Duration of the imager aim beam in 0.1 second increments. Valid:0 – 50 (0 to 5 seconds) Default:0
Lights	Specifies if the imager's lights and aimer should be left on during the entire decode process. The default is disabled. If disabled, the lights are turned on only during image capture, then turned off while the imager attempts to process and decode the barcode. If enabled, the aimer and lights remain turned on during the entire process. In Aggressive Linear Decode mode, set this parameter to enabled to improve the aimer visibility. See “Mode” above.

Length Based Barcode Stripping

Use this procedure to create symbology rules for two barcodes with the same symbology but with different discrete lengths. This procedure is not applicable for barcodes with variable lengths (falling between a maximum value and a minimum value).

Example 1:

- A normal AIM or Symbol symbology role can be created for the desired barcode ID.
- Next, a custom barcode symbology must be created using the same Code ID as the original AIM or Symbol ID rule and each rule would have unique length settings.

Example 2:

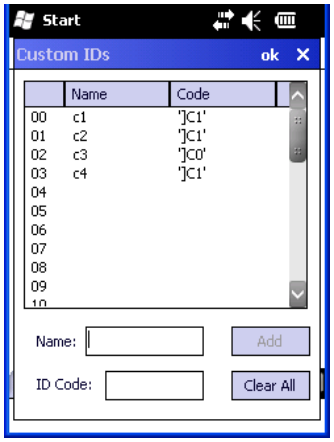
For the purposes of this example, the following sample barcode parameters will be used – EAN 128 and Code 128 barcodes. Some of the barcodes start with '00' and some start with '01'. The barcodes are different lengths.

- 34 character length with first two characters = "01" (strip first 2 and last 18)
- 26 character length with first two characters = "01" (strip first 2 and last 10)
- 24 character length with first two characters = "01" (strip first 2 and last 8). This 24 character barcode is Code 128.
- 20 character length with first two characters = "00" (strip first 0 (no characters) and last 4)

On the Data Options tab, set Enable Code ID to AIM.

Create four custom IDs, using 1 for EAN 128 barcode and 0 for Code 128 barcode.

- c1 = Code = ']C1'
- c2 = Code = ']C1'
- c3 = Code = ']C0' (24 character barcode is Code 128)
- c4 = Code = ']C1'

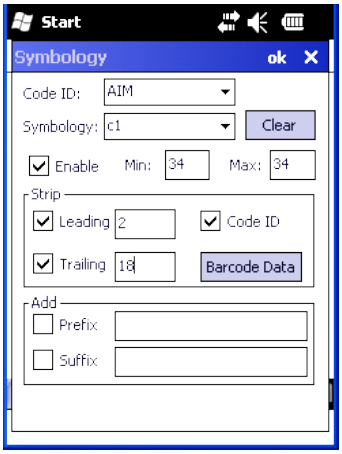


AIM Custom IDs

AIM custom symbology setup is assigned in the following manner:

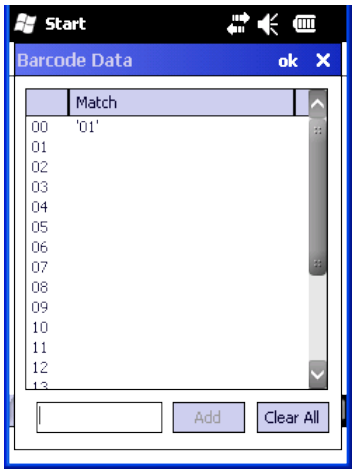
- c1 min length = 34, max length = 34, strip leading 2, strip trailing 18, Code ID enabled, Barcode Data = "01"
- c2 min length = 26, max length = 26, strip leading 2, strip trailing 10, Code ID enabled, Barcode Data = "01"
- c3 min length = 24, max length = 24, strip leading 2, strip trailing 8, Code ID enabled, Barcode Data = "01"
- c4 min length = 20, max length = 20, strip leading 0, strip trailing 4, Code ID enabled, Barcode Data = "00"

Add the AIM custom symbologies. Refer to Symbology Settings for instruction.



AIM Custom Setup for C1

Tap the Barcode Data button. Tap the Add button. Add the data for the match codes.



Barcode Match Data for C1

Refer to the previous section *Barcode Data Match List* for instruction. Scan a barcode and examine the result.

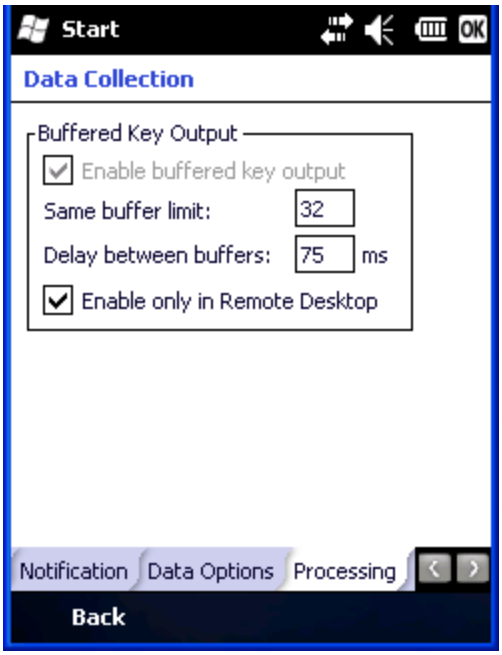
Processing Tab

The Processing tab contains a user configurable key delay that applies to scanned barcodes as they are input when Remote Desktop is the application with the input focus.

Factory Default Settings

Wait between keys	75 ms
Only in Remote Desktop	Enabled

Note: Settings on this panel have no effect when RFTerm is the application with the input focus.



Processing Tab

Wait between keys

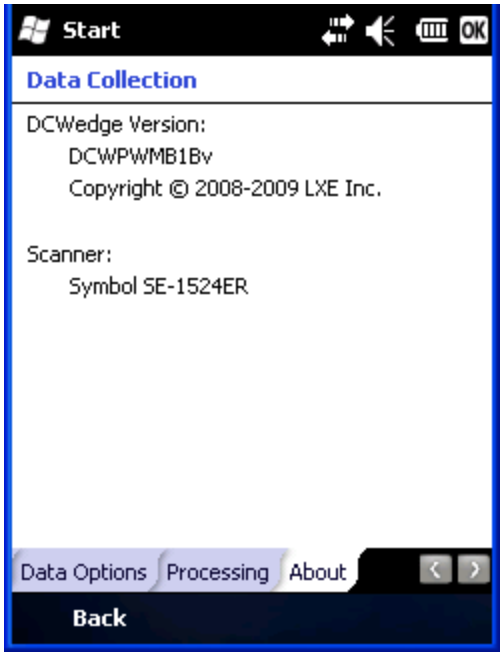
Specifies the number of milliseconds to delay after each character in the scanned barcode is processed as a keystroke. This value may need to be adjusted depending on the network traffic in the environment. The default value is 75 ms. Valid value is from 0 to 9999. A zero value is No Delay between characters.

Only in Remote Desktop

The delay specified in *Wait between keys* is only applied when Remote Desktop is enabled and is the application with the input focus. When disabled, all keystrokes are delayed by the number of milliseconds specified in *Wait between keys*.

About Tab

The About tab lists the version of the Data Collection Wedge (DCWedge) software and the type of scanner/imager installed in the MX7 Tecton.



Symbol Scanner

HHP Imager

About Tab

Valid scanner / imager types:

HHP – Hand Held Products 5300 2D Imager

Symbol – Symbol SE955I

Symbol - Symbol SE955E

Symbol – Symbol SE1524

Blank – No scanner installed

Encryption

Start | Settings | System | Encryption

This panel enables or disables encryption of data files on removable storage cards. The default is Disabled.

Settings
OK
Encryption
Encrypt files when placed on a storage card.
Encrypted files can be read only by this device. WARNING: Encrypted files cannot be recovered after hard reset or clearing storage. To help prevent data loss, back up data from storage cards to another location.

Encryption Settings

Note: Tap Start | Help for context sensitive Windows Mobile Help when changing or viewing options. Tap the X icon in the top right corner to close Windows Mobile Help.

External GPS

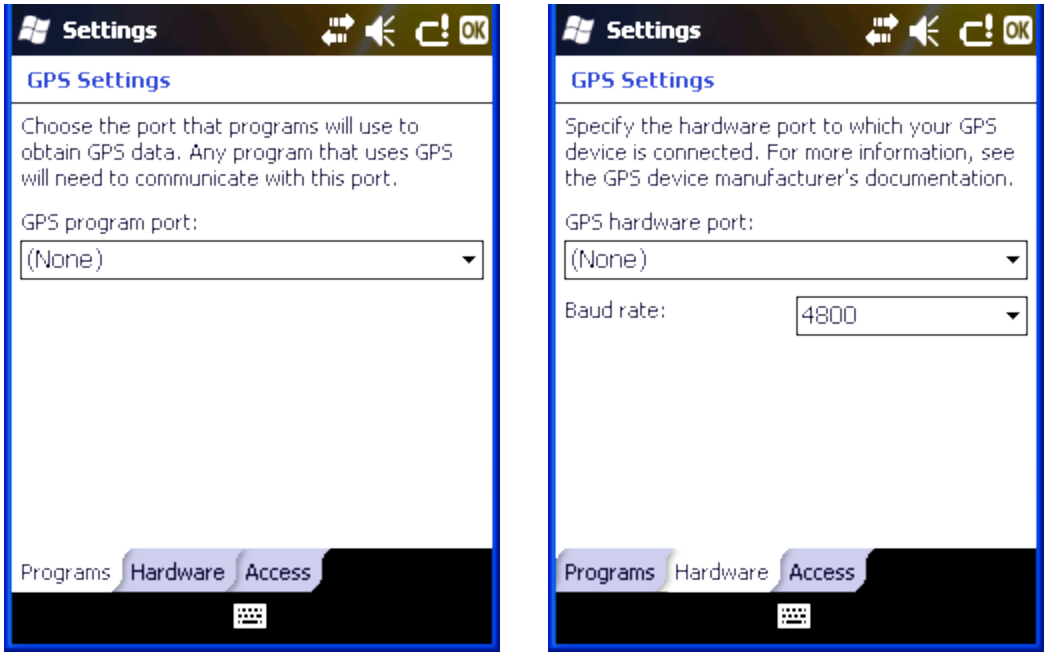
Start | Settings | System | External GPS

Factory Default Settings

GPS Program Port	None
GPS Hardware Port	None
Baud Rate	4800
Access	Automatic

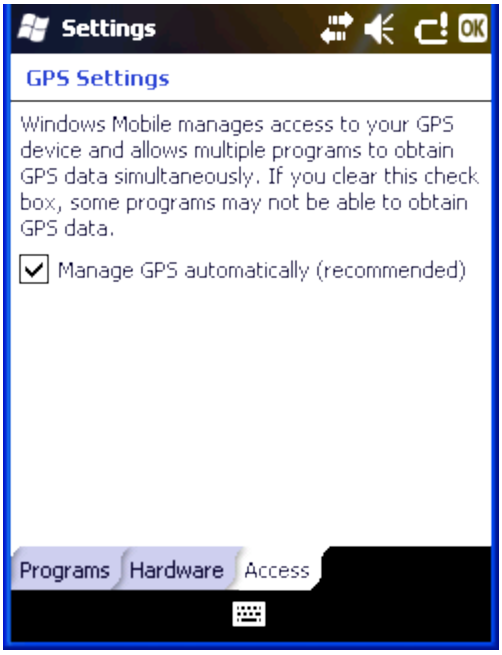
This panel configures serial GPS access over hardware serial ports using the Microsoft GPS manager. The port used, baud rate and port sharing must be specified.

In order to use the configuration items on these panels, applications must use the Microsoft GPS API interface rather than reading the serial port directly. If the application reads the serial port directly, these settings are not necessary.



External GPS Settings – Programs Panel and Hardware Panel

Access


Settings
OK
GPS Settings
Windows Mobile manages access to your GPS device and allows multiple programs to obtain GPS data simultaneously. If you clear this check box, some programs may not be able to obtain GPS data.
Manage GPS automatically (recommended)
Programs
Hardware
Access

External GPS Settings – Access Panel

Note: Tap Start | Help for context sensitive Windows Mobile Help when changing or viewing options. Tap the X icon in the top right corner to close Windows Mobile Help.

License Manager

Start | Settings | System | License Manager

Use this option to view software license registration details, and service contract length for purchased software installed on the MX7 Tecton.

Note: Following image is a sample screen.

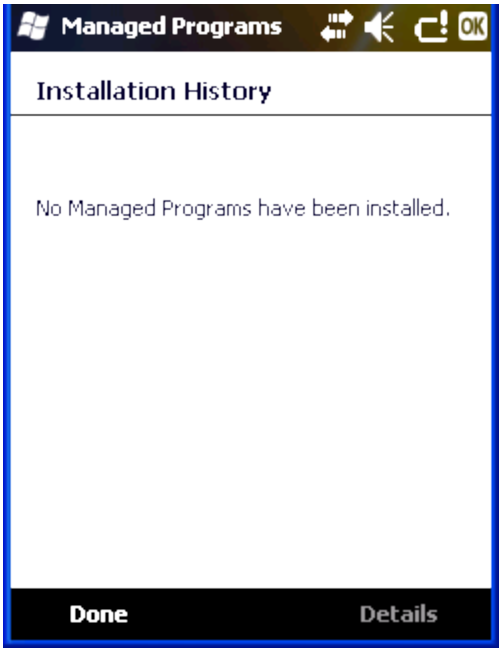
Your License Manager panel may show more tabs, e.g. RFTerm, depending on the number of software applications running on the MX7 Tecton that require a license. Contact your LXE representative for software updates and releases as they become available.

Software and driver version information is located in the About panel. Copyright information is located in the Copyright panel.

Managed Programs

Start | Settings | System | Managed Programs

This panel displays the install history for .NET managed programs. The list is read only.



Managed Programs Settings

See "Remove Programs" on page 148

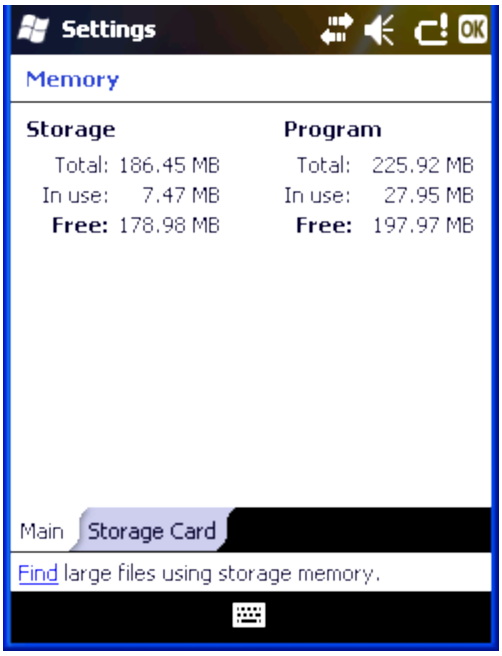
Note: Tap Start | Help for context sensitive Windows Mobile Help when changing or viewing options. Tap the X icon in the top right corner to close Windows Mobile Help.

Memory

Start | Settings | System | Memory

These panels report the current state of virtual memory.

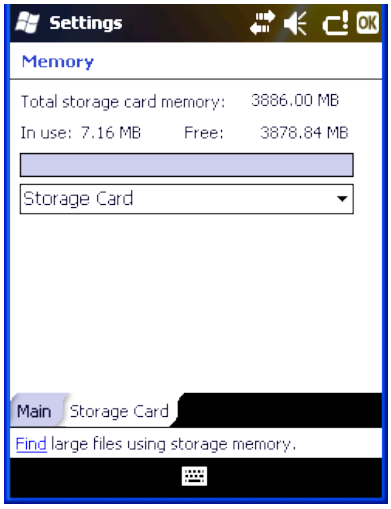
Main



Memory Settings – Main Panel

The split between Storage memory and Program memory is not adjustable.

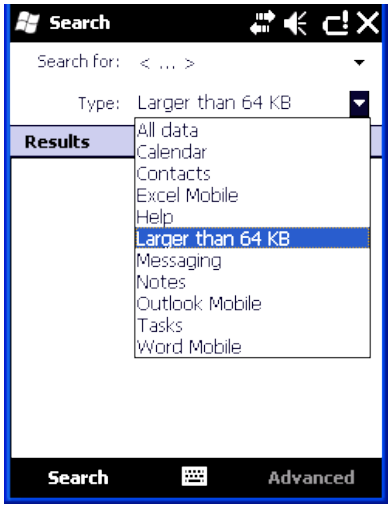
Storage Card



Memory Settings – Storage Card Panel

The pop-up list shows all mounted storage, both fixed and removable.

The Find prompt at the bottom of the screen launches the Search utility.



Memory Settings - Search by File Size

Note: Tap Start | Help for context sensitive Windows Mobile Help when changing or viewing options. Tap the X icon in the top right corner to close Windows Mobile Help.

Mixer

Start | Settings | System | Mixer

The MX7 Tecton has a speaker located above the scan button. It is active when a headset is not connected to the device.

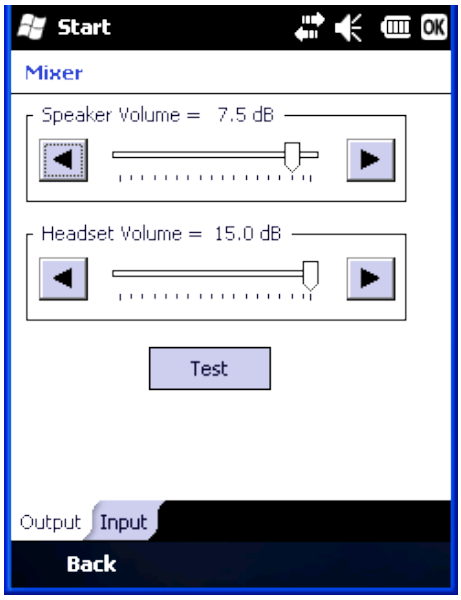
Use the settings on these panels to adjust the volume, record gain and sidetone for microphone input, speaker and speaker output.

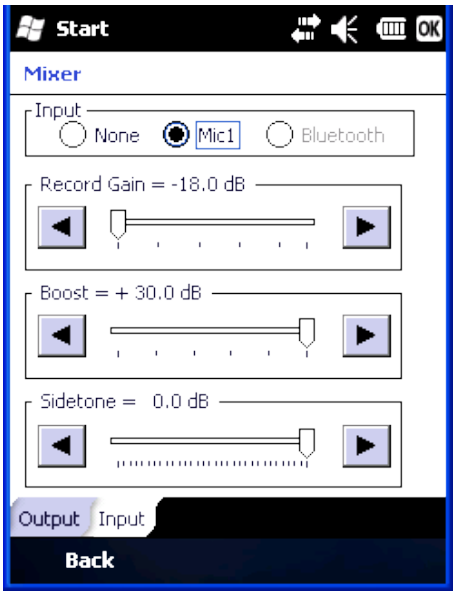
Headsets can be enabled, disabled and selected using these panels.

Factory Default Settings

Output	
Speaker Volume	7.5 dB
Headset Volume	15.0 dB
Input	
Input	Mic1
Record Gain	18.0 dB
Boost	+ 30.0 dB
Sidetone	0.0 dB

Mixer Panels





Tap and hold the sliders and move them either left or right, or tap the left and right arrows, to adjust decibel levels.

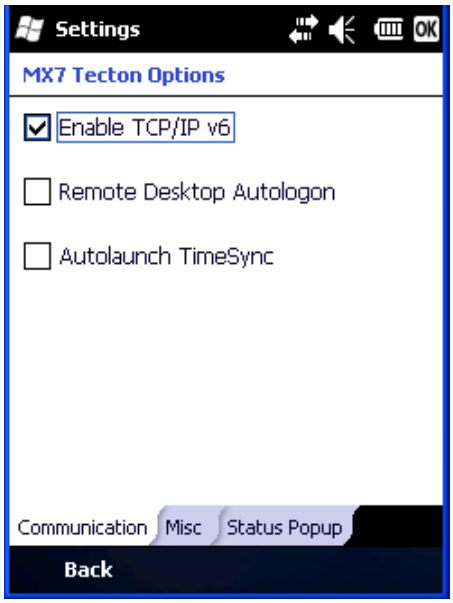
Tap the **Test** button on the Output panel to hear a changed setting.

MX7 Tecton Options

Start | Settings | System | MX7 Tecton Options

Set MX7 Tecton specific device options. Options that cannot be edited by the user are dimmed. Contact your LXE representative for enhancements and updates as they become available.

Communication



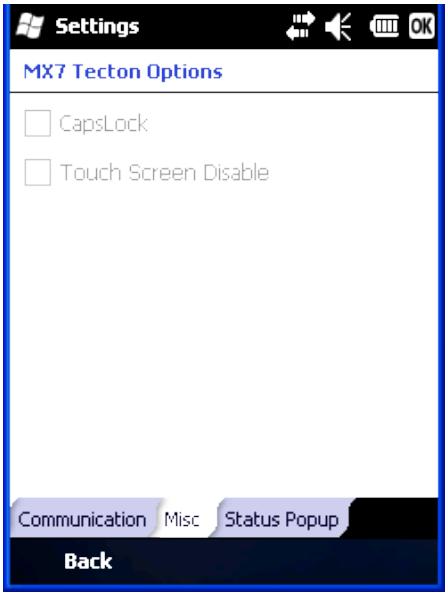
MX7 Tecton Options – Communication

By default, **TCP/IP version 6** is enabled on the MX7 Tecton. Check this checkbox to disable TCP/IP version 6.

By default, **Remote Desktop Autologin** is disabled. Check this checkbox to enable Remote Desktop Autologin.

Autolaunch TimeSync enables time synchronization when the MX7 Tecton boots.

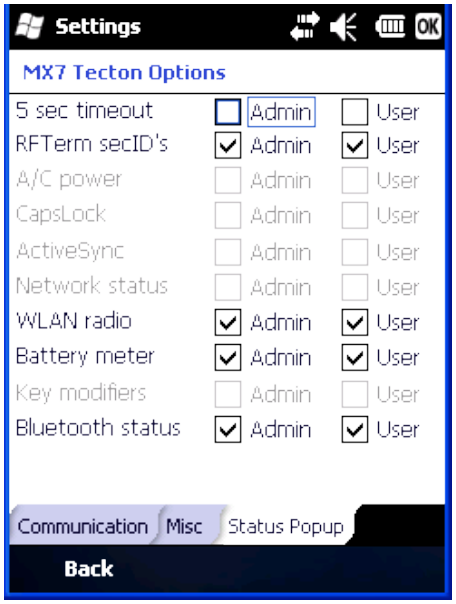
Misc.



MX7 Tecton Options – Misc.

There are no user configurable options on this screen.

Status Popup



Options – Status Popup

When the Status popup window is enabled, and displayed, it is placed on top of the window in focus and hides any data beneath it.

The Status Popup window is closed by pressing the assigned Status User or Status Admin key sequence.

Note: LXE recommends using a Diamond key for the assigned key sequence to use when opening and closing the popup. If a Function key is used, that Function key is not available to applications that generally use Function keys such as RFTerm.

Using the Buttons settings panel (Start | Settings | Personal | Buttons | Program Buttons), the System Administrator must first assign a Status User key for the end-user when they want to toggle the Status Popup Window on or off. Select the desired key and assign that key to StatPopup.

Similarly the System Administrator must also assign a Status Admin key to perform the same function for the Admin popup. Select the desired key and assign that key to Admin StatPop.

Status popup window display options (taskbar icons) are assigned on the Status Popup tab. E.g. WLAN radio, Battery meter, Bluetooth status, RFTerm SecID's (Secondary IDs), etc.

The **default** is for the User and Admin status popup windows to show all status information. The 5-second timeout to remove the status popup from the display is disabled by default for the User and Admin status popup windows.

Peripherals

Start | Settings | System | Peripherals

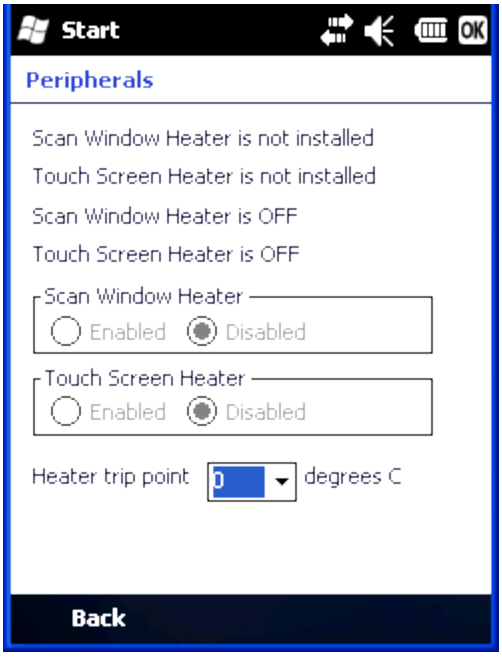
This panel is used to enable and disable the touch screen heater and scan window heater.

Factory Default Settings

Heaters	
Touch screen heater	Enabled
Scan window heater	Enabled
Heater Trip Point	40º C / 100º F

Heaters

Note: Settings have no effect if the touch screen / scan window heaters are not installed.



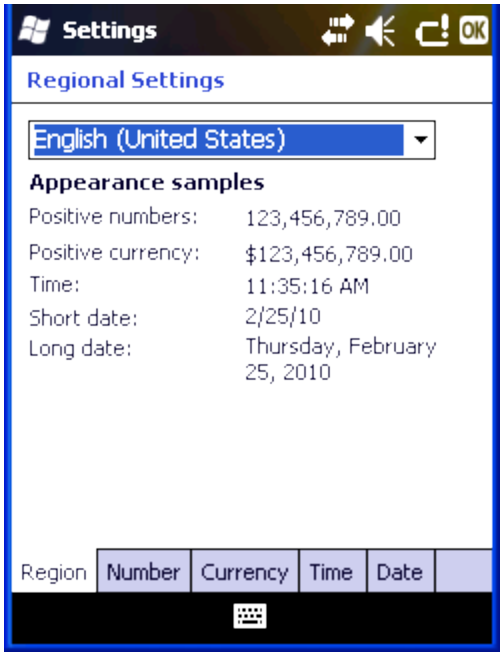
Click the radio button to enable or disable the heaters.

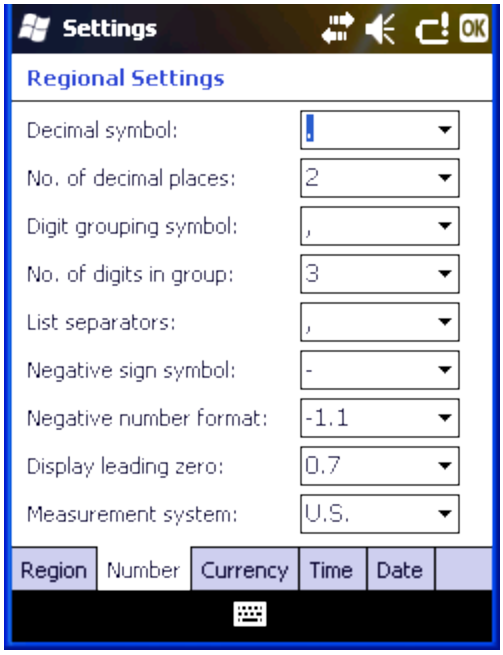
The default **heater trip point** is 40° C / 100° F. Choose a different trip point from the drop down list and click OK. The change is in effect immediately.

Celsius degrees (temperature) = (Fahrenheit temperature-32)*5/9.

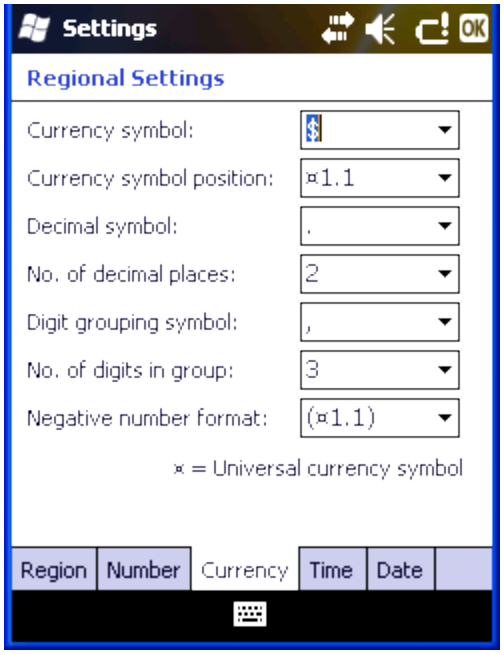
Regional Settings

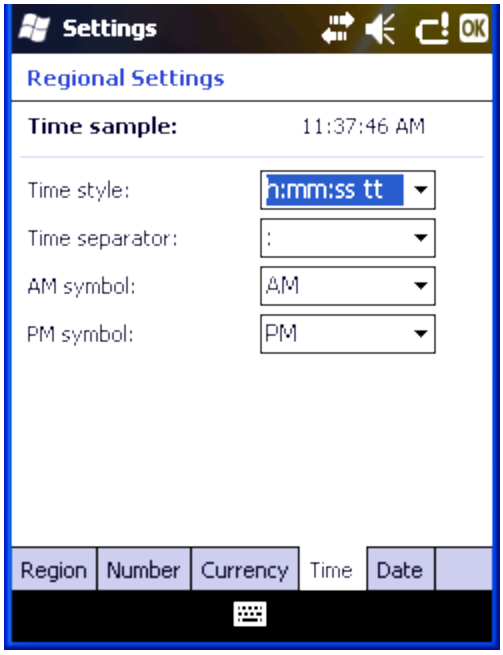
Start | Settings | System | Regional Settings



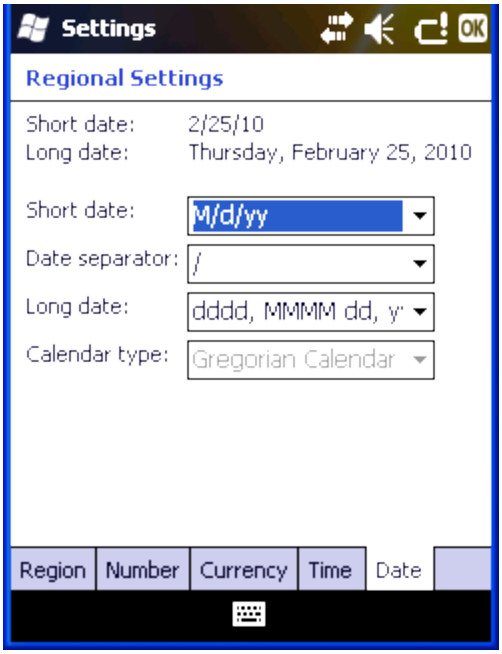


Regional Settings – Region Panel and Number Panel





Regional Settings – Currency Panel and Time Panel



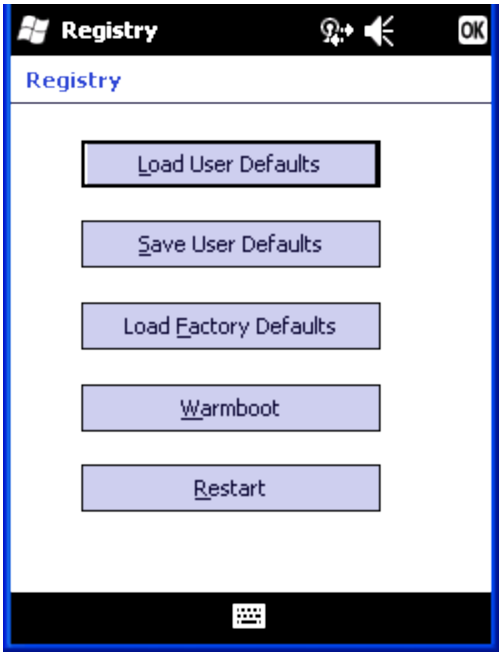
Regional Settings – Date Panel

Note: Tap Start | Help for context sensitive Windows Mobile Help when changing or viewing options. Tap the X icon in the top right corner to close Windows Mobile Help.

Registry

Start | Settings | System | Registry

Choose an MX7 Tecton software reload scheme.

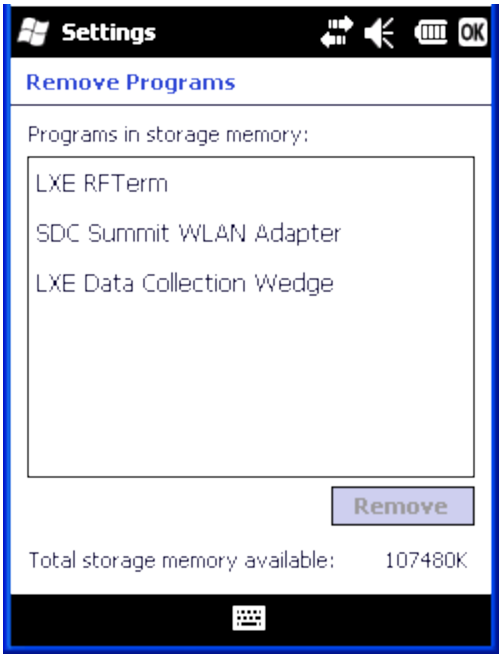


Tab	Contents
Load User Defaults	When clicked, a standard load file dialog is opened, to allow the user to pick a Registry Save (.RSG) file. The applet then copies the specified User registry file to the Active registry. The user is asked to verify a reboot, and then the applet does a warmboot to activate the new registry. Load User Defaults takes 20 seconds from SD card, or 10 seconds from internal flash.
Save User Defaults	When clicked, a standard Save File dialog is opened, to allow the user to name the Registry Save (.RSG) file. The applet then copies the Active registry to the specified User registry file. Save User Defaults takes 30 seconds to save to SD card, or 10 seconds to save to internal flash.
Load Factory Defaults	The applet copies the Factory Default registry from the OS to the Active registry (by deleting the current registry). The user is asked to verify a reboot, and then the applet does a restart to activate the factory default registry. If a user password has been set, the applet warns the user that the password will be erased, and asks them to enter it before the reboot is allowed.
Warmboot	When clicked, the OS does a registry flush (Active registry saved to Flash registry hive), and then a warmboot.
Restart	When clicked, the OS does a registry flush, and then a restart.

Remove Programs

Start | Settings | System | Remove Programs

This panel is used to uninstall programs. The Remove Program listing is for all programs installed via ActiveSync or via a CAB file. Programs installed via a package file are not included in this list.



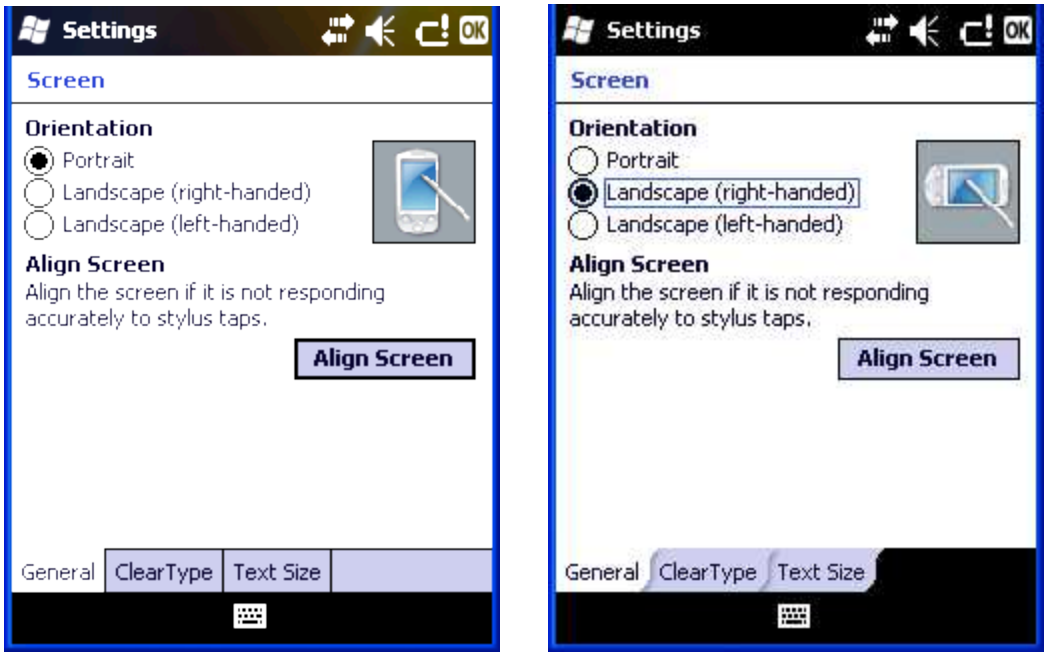
Remove Programs Settings

Note: Tap Start | Help for context sensitive Windows Mobile Help when changing or viewing options. Tap the X icon in the top right corner to close Windows Mobile Help.

Screen

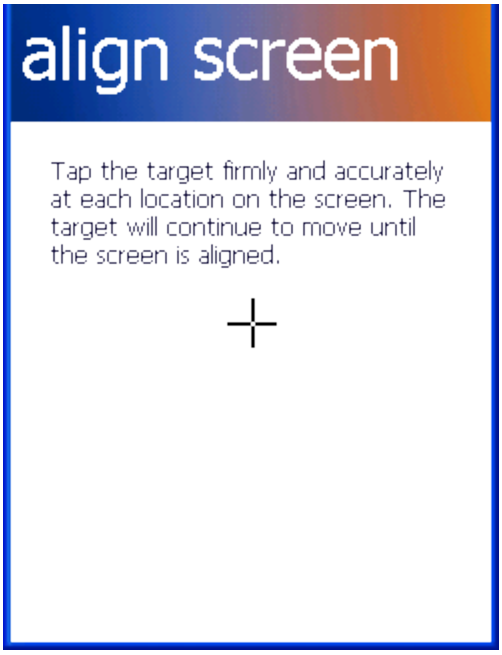
Start | Settings | System | Screen

General



Screen Settings - General

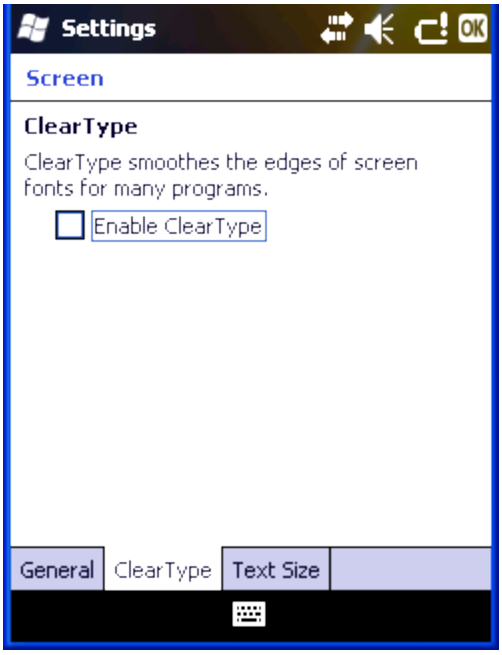
Align Screen


align screen
Tap the target firmly and accurately at each location on the screen. The target will continue to move until the screen is aligned.

Screen Settings – Alignment Panel

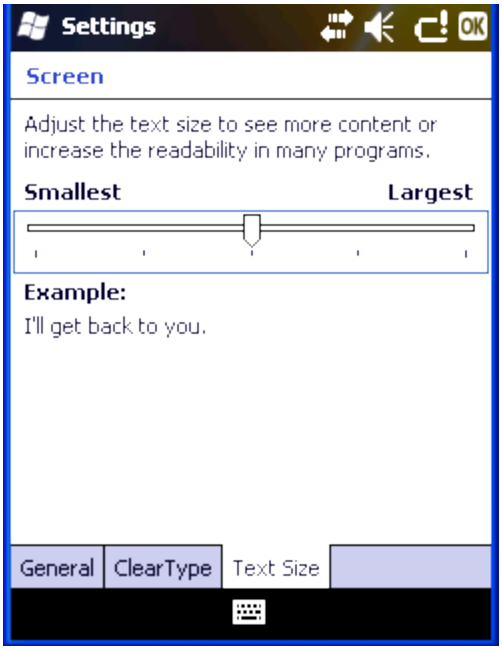
Tap the Align Screen button. The align screen opens and displays a large cross-hair in the middle of the screen. Tap the middle of the cross-hair as it moves around the screen. When the process is complete, the General screen is displayed. Tap ok and the changes are saved. The new alignment is in effect immediately.

Clear Type



Screen Settings – Clear Type Panel

Text Size



Screen Settings – Text Size Panel

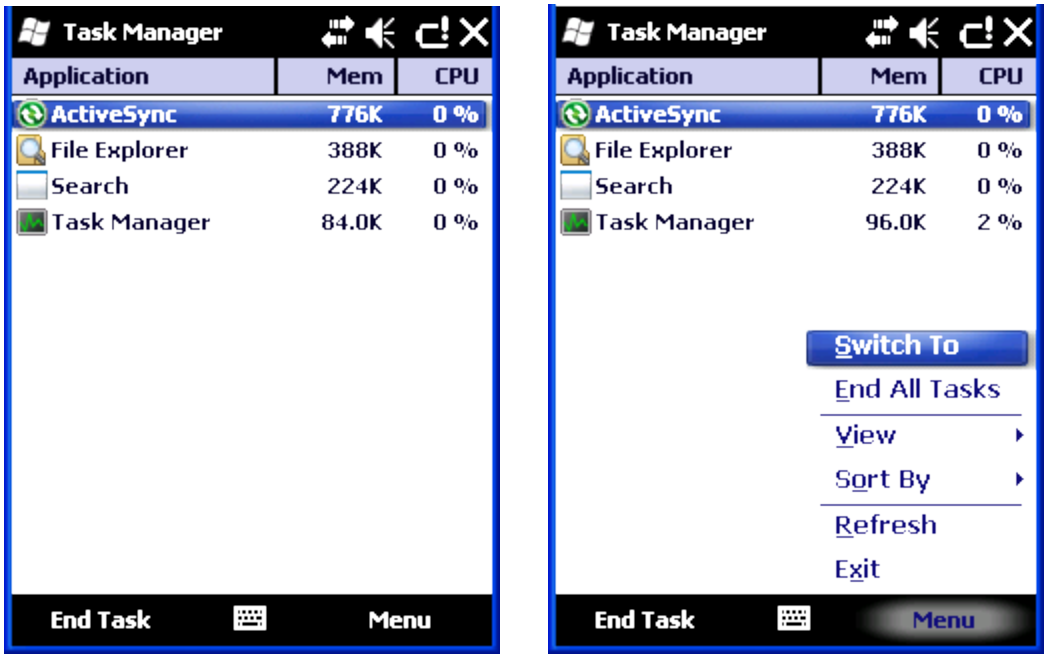
Tap the marker and slide it across the bar. As the marker moves, the example text increases or decreases. Tap ok and the change is saved. The new text size is in effect immediately.

Note: Tap Start | Help for context sensitive Windows Mobile Help when changing or viewing options. Tap the X icon in the top right corner to close Windows Mobile Help.

Task Manager

Start | Settings | System | Task Manager

This panel displays all running tasks as well as the memory and CPU bandwidth being used by each task.



Task Manager Menu

Tapping on the column headings at the top of the screen sorts the tasks by the contents of that column. Tapping the same heading a second time reverses the sort order of that column.

Highlight an application then tap End Task. More options are available in the Task Manager Menu.

Highlighting then right-clicking on an application displays a popup menu with the following choices:

- Switch To – Switch to the highlighted task. Double-clicking on the task name also performs this function.
- End Task – End the selected task only.
- End All Tasks – End all tasks.

The list is reset by cold boot (or restart).

IMPORTANT – Any Windows Mobile program that has been run, even if the program has been exited, remains in memory ready to run again. If memory runs out, the programs are released from memory. However, to avoid out of memory operational problems, it is best to manually terminate unwanted tasks using this option.

Note: Tap Start | Help for context sensitive Windows Mobile Help when changing or viewing options. Tap the X icon in the top right corner to close Windows Mobile Help.

Wi-Fi

Start | Settings | System | Wi-Fi

Use this option to set parameters and manage profiles for the wireless client pre-loaded on your MX7 Tecton.

See Summit Client Utility (SCU) for more information.

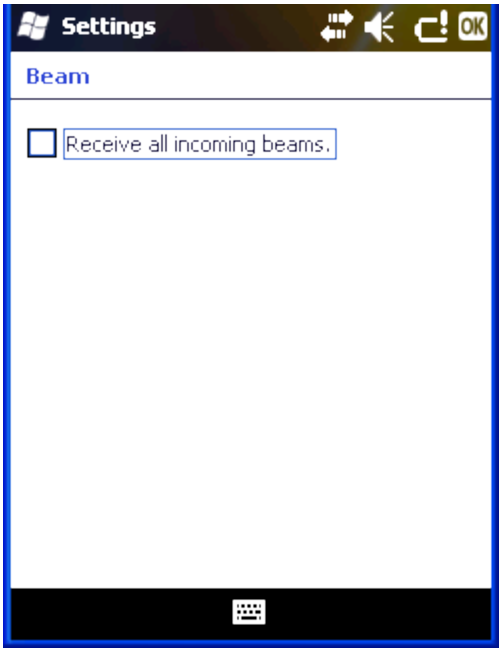
Connections Panel

Beam

Start | Settings | Connections | Beam

Enable or disable receiving OBEX[1] data beams, either by IrDA[2] or Bluetooth.

Note: The MX7 Tecton does not support beaming.



Beam Settings

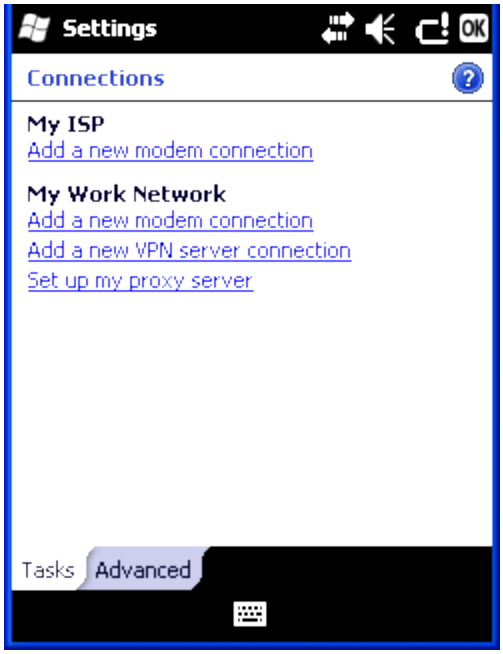
The default setting for Beam Settings is Disabled as the MX7 Tecton does not support beaming.

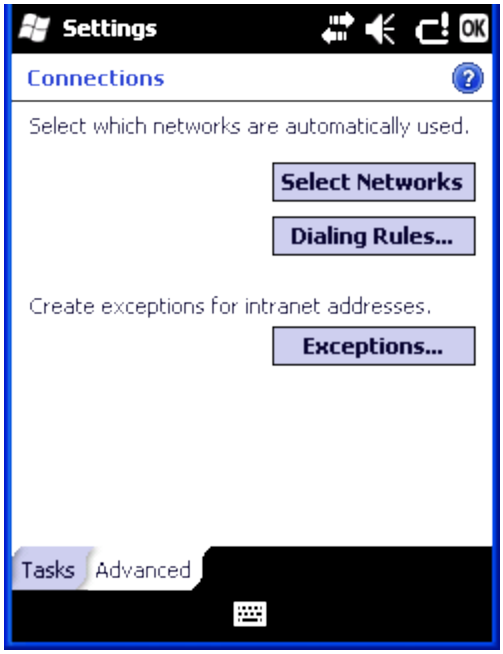
[1] oBject EXchange - a communications protocol used to exchange information between mobile devices. The device must support infrared communication.
[2] Infrared Data Association. Also used as an abbreviation for the Infrared (IR) port on a mobile device.

Connections

Start | Settings | Connections | Connections

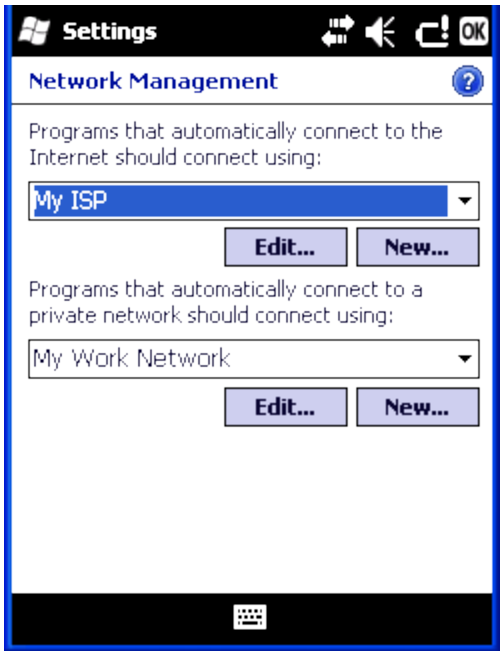
Configure connections to a host PC.

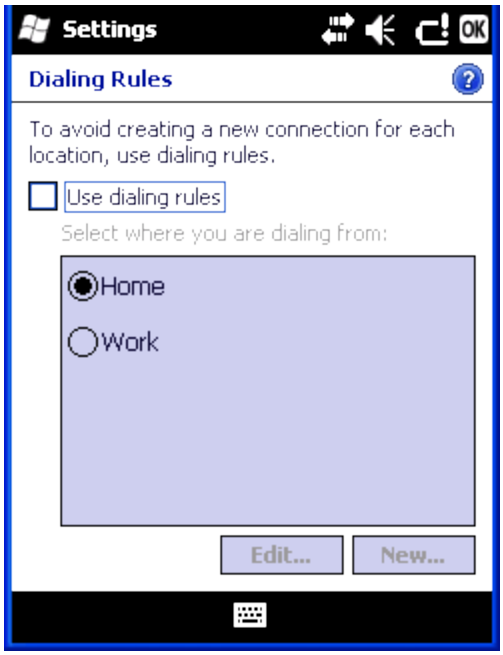


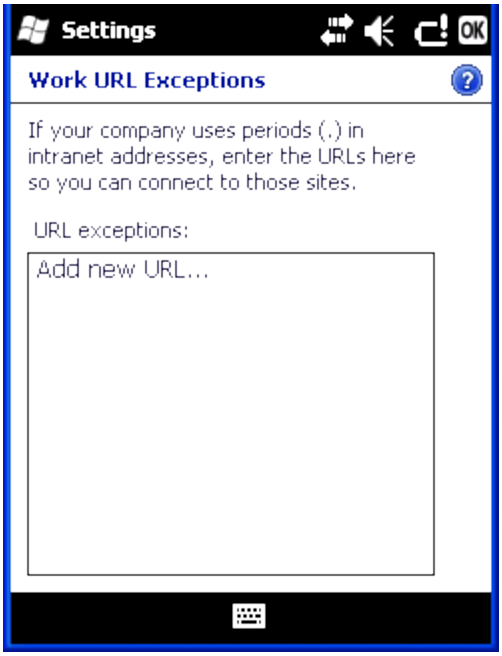


Connections Settings – Task Panel and Advanced Panel

Advanced Panel Options





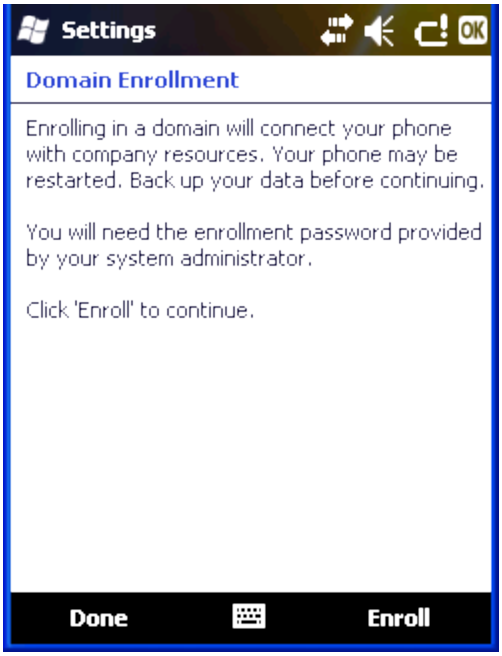

Settings
OK
Work URL Exceptions
If your company uses periods (.) in intranet addresses, enter the URLs here so you can connect to those sites.
URL exceptions:
Add new URL...

Note: Tap Start | Help for context sensitive Windows Mobile Help when changing or viewing options. Tap the X icon in the top right corner to close Windows Mobile Help.

Domain Enroll

Start | Settings | Connections | Domain Enroll

Enroll in Active Directory.


Settings
OK
Domain Enrollment
Enrolling in a domain will connect your phone with company resources. Your phone may be restarted. Back up your data before continuing.
You will need the enrollment password provided by your system administrator.
Click 'Enroll' to continue.
Done
Enroll

Domain Enrollment Settings

To begin enrollment, tap Enroll in the Status bar. Please contact your system administrator for the applicable information to complete the screens.

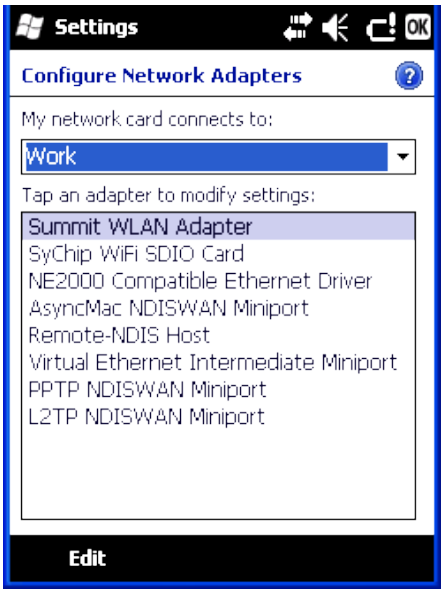
Note: Tap Start | Help for context sensitive Windows Mobile Help when changing or viewing options. Tap the X icon in the top right corner to close Windows Mobile Help.

Network Cards

Start | Settings | Connections | Network Cards

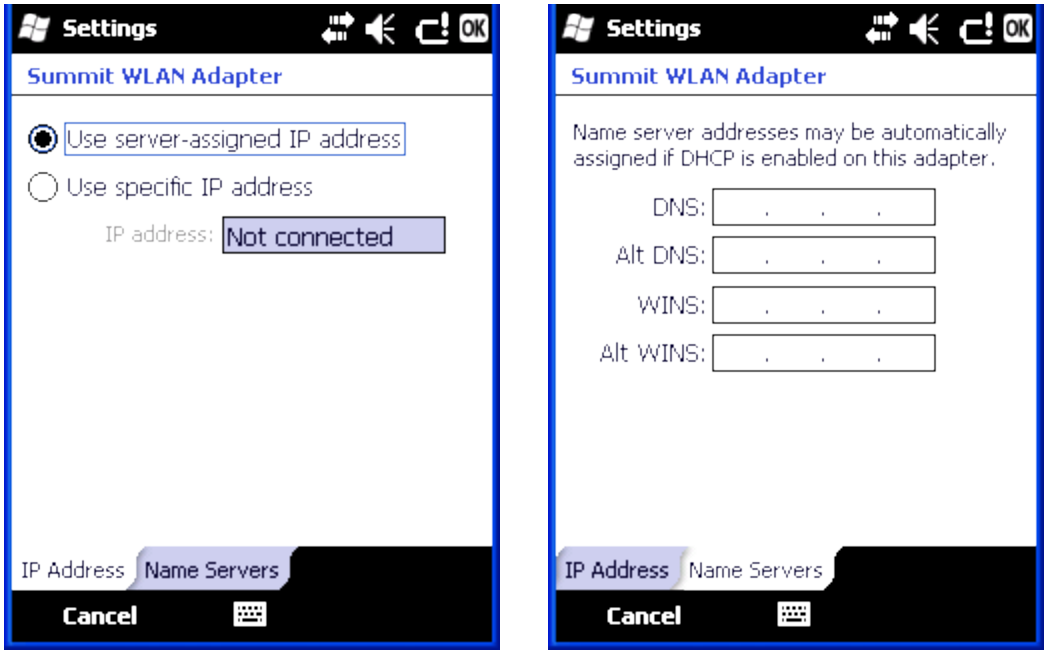
This panel displays a listing of network adapters. The list is based on drivers installed in the registry whether the adapter is actually supported by the hardware or not.

The Network Cards may not always be displayed. If this icon is not displayed, access Network Cards by selecting Start | Settings | Connections | Wi-Fi | Network Cards tab.



Network Card Settings

To configure a network card, tap on the adapter name and enter the IP address (or select Use server assigned IP address) and the name server addresses.



Network Card – IP Address and Name Servers

Note: Tap Start | Help for context sensitive Windows Mobile Help when changing or viewing options. Tap the X icon in the top right corner to close Windows Mobile Help.

USB to PC

Start | Settings | Connections | USB to PC

This option is enabled when connection to a host PC using a USB cable is required. The option is enabled by default.

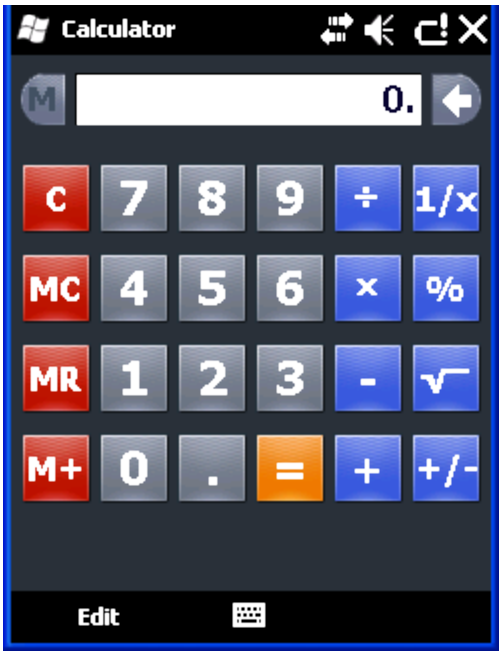
Settings
OK
USB to PC
Changing the type of USB connection your device uses can help with problems connecting ActiveSync.
Enable advanced network functionality

Connections - USB to PC

Standard Microsoft Applications

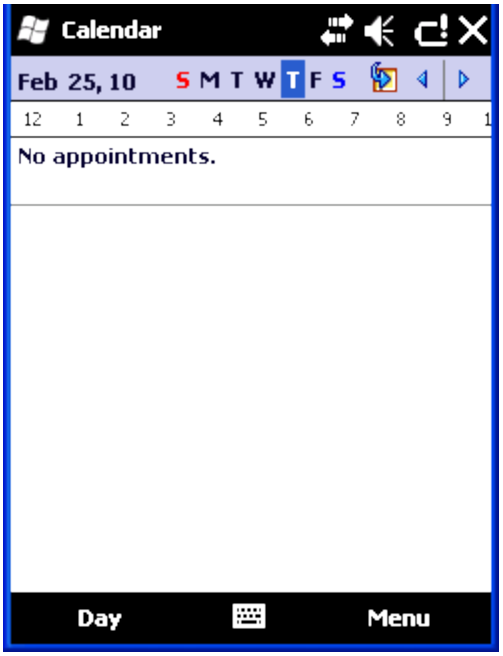
Note: The intent of this segment is to document standard Microsoft applications loaded on the MX7 Tecton. Documentation only consists of a panel and minimal explanation. These are standard Microsoft small form applications for which help is available on the MX7 Tecton and the Internet.

Calculator



Mathematical calculator application. Use Copy (Ctrl+C) and Paste (Ctrl+V) to move results between applications.

Calendar

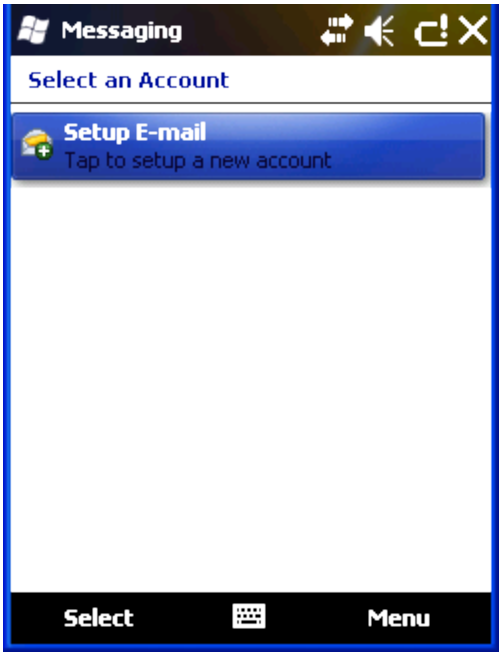


Calendar/date book application. Can be synchronized with PC Outlook calendar using ActiveSync.

Contacts

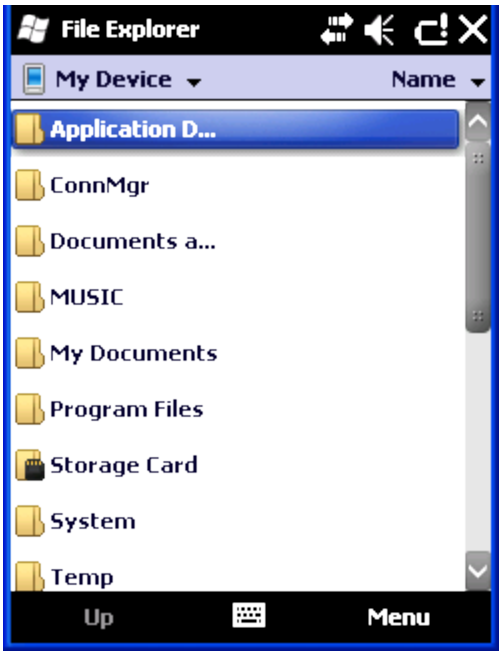
Address book application. Can be synchronized with PC Outlook address book using ActiveSync.

Email



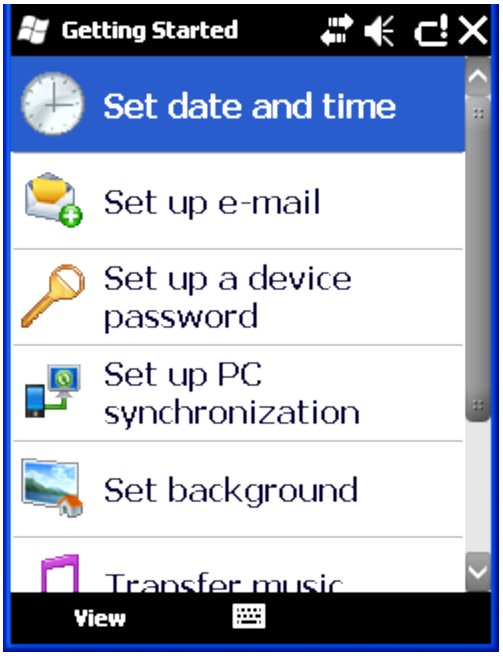
Email application. Can be synchronized with PC Outlook email using ActiveSync or it can synchronize with an Exchange server.

File Explorer



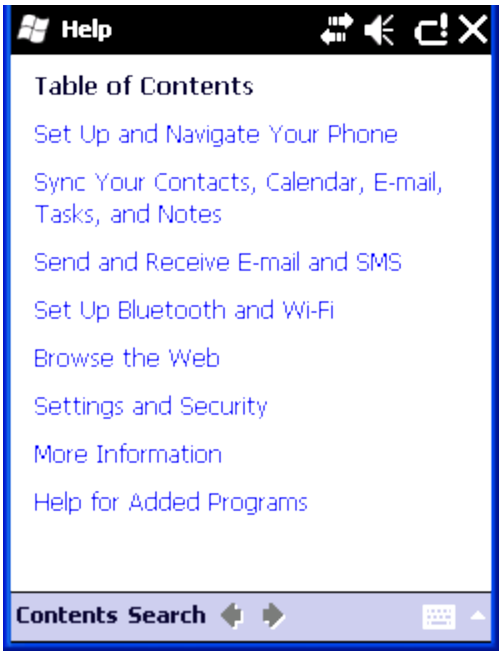
Displays a structured picture of files on the system.

Getting Started



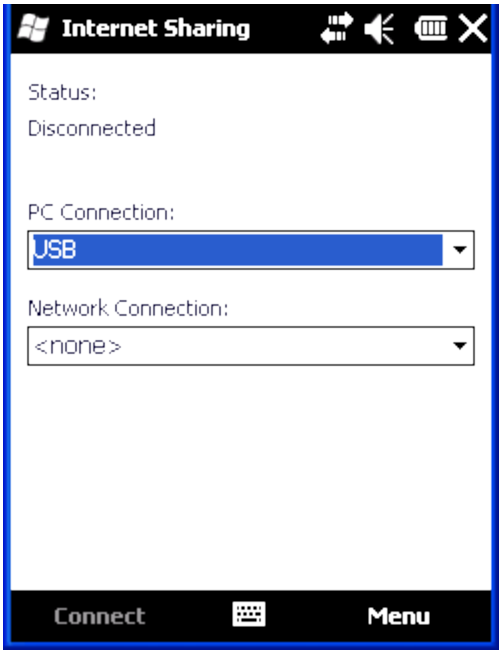
This application provides several wizards to walk a user through device configuration.

Help



Access Windows Mobile help system on the MX7 Tecton. Options to search using Windows Live Search are available.

Internet Sharing

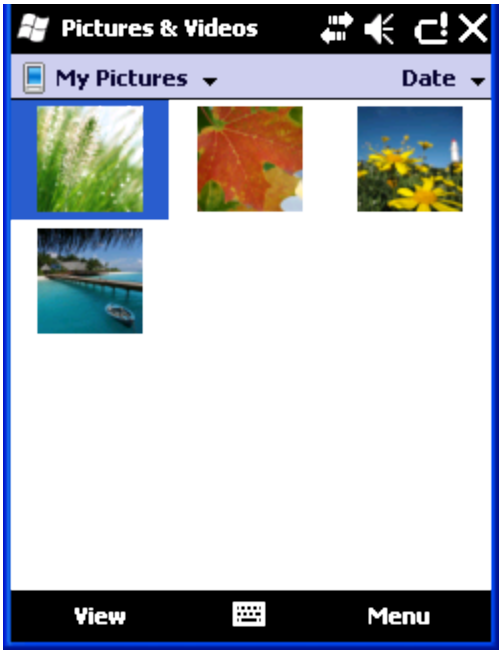


Internet Sharing. Setup PC Connection and Network Connection.

Notes

Notes. Notebook application. Select Menu | View Recording Toolbar to create an audio note. Can be synchronized with PC Outlook notes using ActiveSync.

Pictures and Video



Pictures and Video. Picture/video viewer application. Can be synchronized with PC My Documents folder using ActiveSync.

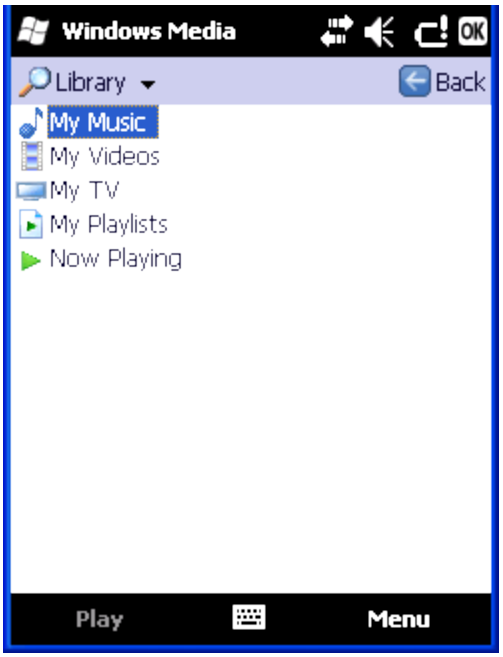
Tasks

Tasks. Task list application. Can be synchronized with PC Outlook task list using ActiveSync.

Windows Live

Windows Live. Sign in to Microsoft Windows Live online service. Internet access required.

Windows Media

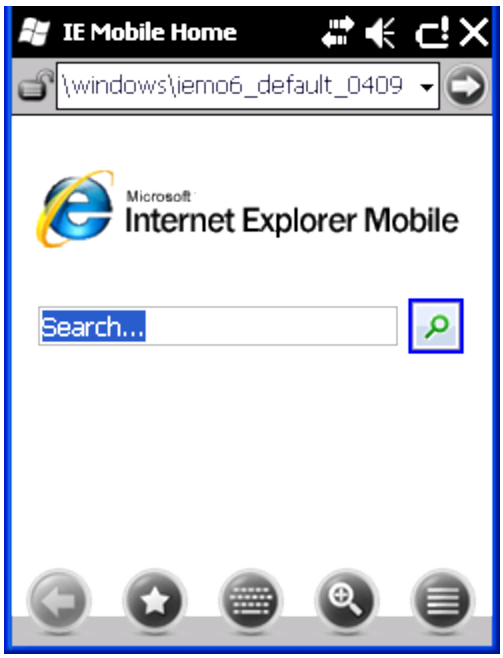


Windows Media. Audio visual management program. Not supported on the MX7 Tecton.

Internet Explorer Mobile

Start | Internet Explorer

Set options for Internet connectivity. The navigation icons change state based on the web page contents.



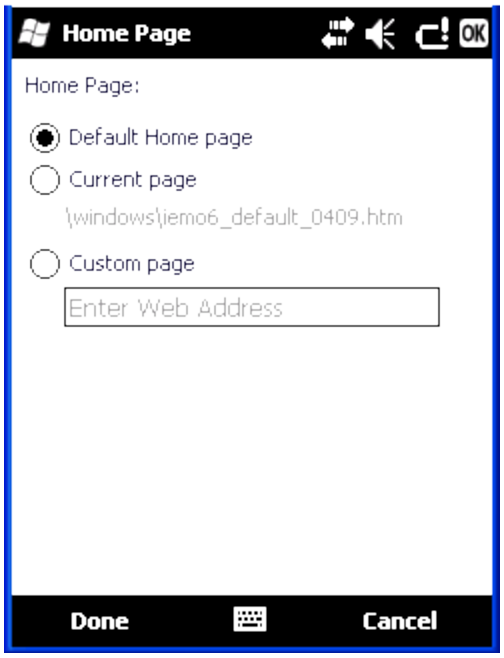
Internet Explorer Mobile

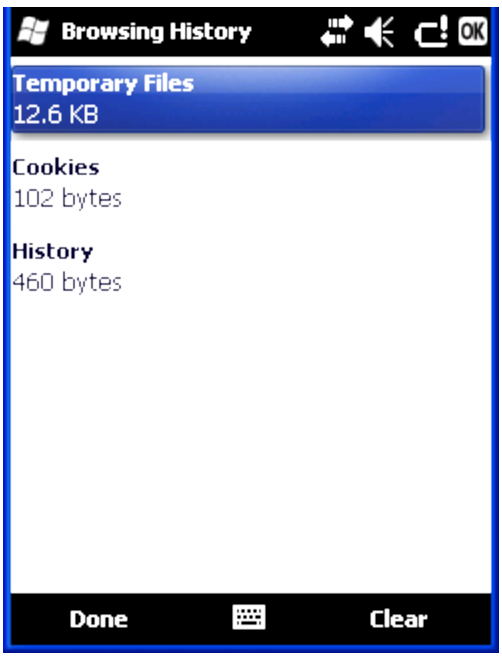
Navigation Icon	Action	Navigation Icon	Action
	Add folder		Favorites
	Add to Favorites		Options
	Go Back		Soft Input Panel
	Delete Favorite		Zoom In Zoom Out

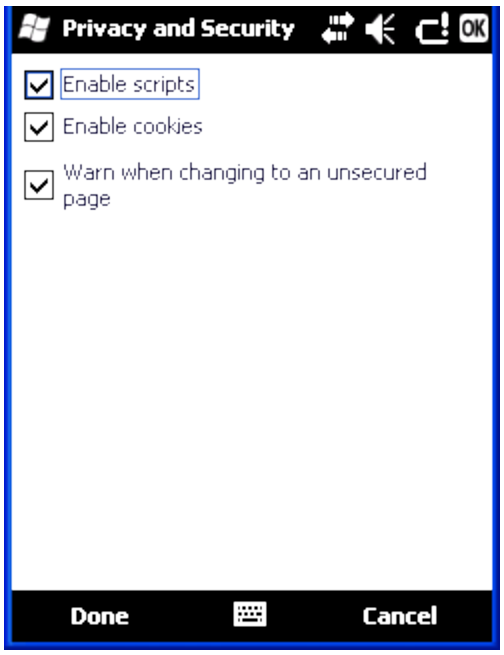
Options

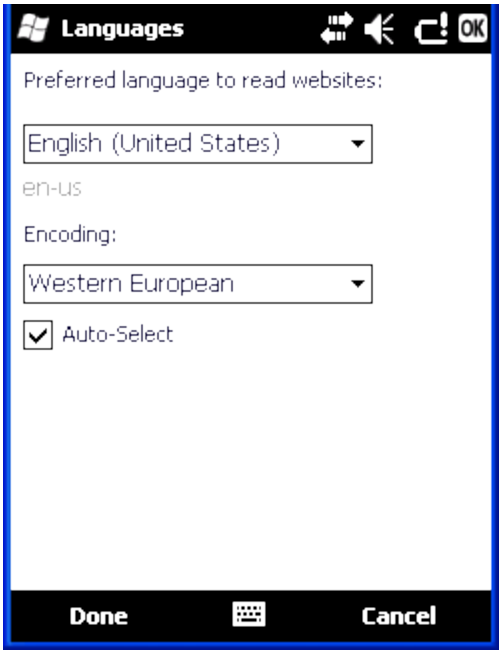
IE Mobile Hom
\windows\iemo
Microsoft
Interne
Search...
Home Page
History
Forward
Refresh
View
Tools
Copy/Paste
Exit
Send Link...
Properties
Options

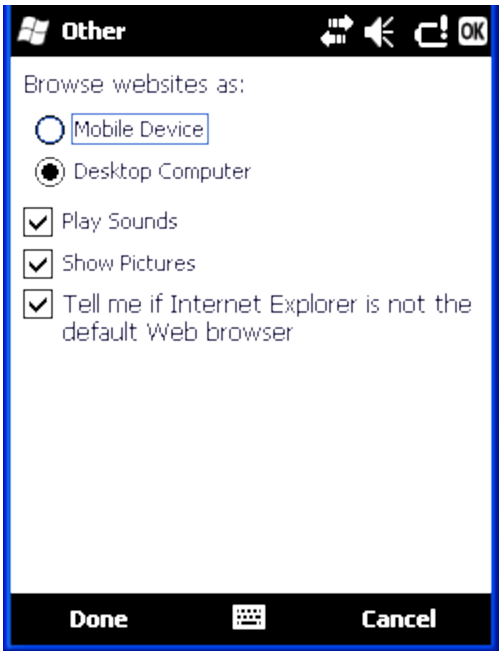
Options
Home Page
Browsing History
Privacy and Security
Languages
Other
Open
Close


Home Page
Home Page:
Default Home page
Current page
\windows\iemo6_default_0409.htm
Custom page
Enter Web Address
Done
Cancel


Browsing History
Temporary Files
12.6 KB
Cookies
102 bytes
History
460 bytes
Done
Clear


Privacy and Security
OK
Enable scripts
Enable cookies
Warn when changing to an unsecured page
Done
Cancel


Languages
OK
Preferred language to read websites:
English (United States)
en-us
Encoding:
Western European
Auto-Select
Done
Cancel


Other
OK
Browse websites as:
Mobile Device
Desktop Computer
Play Sounds
Show Pictures
Tell me if Internet Explorer is not the default Web browser
Done
Cancel

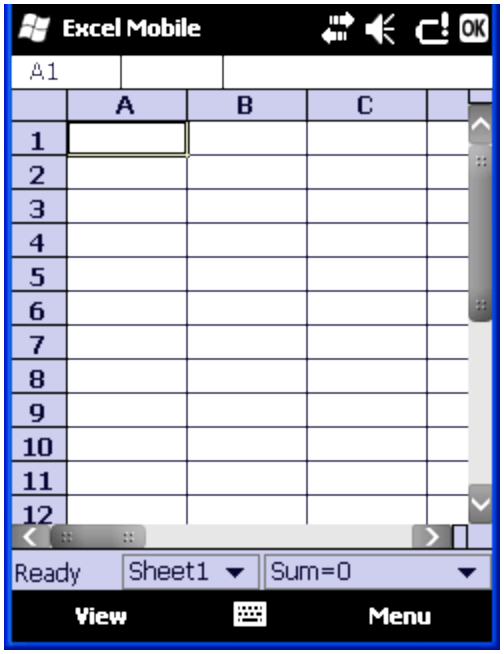
Office Mobile

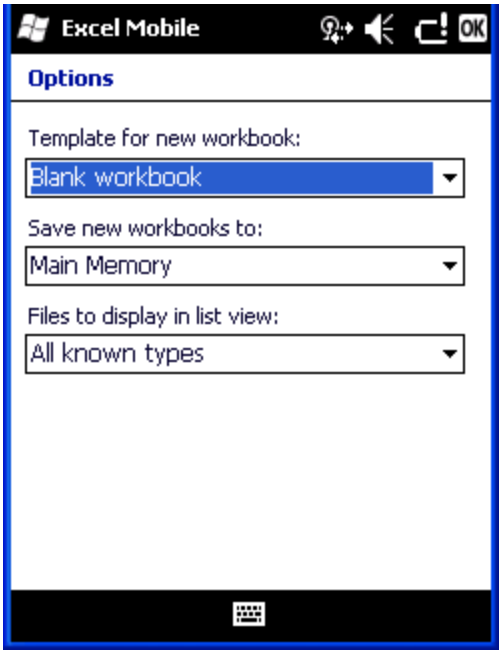
A suite of business related applications. Files can be created, opened, viewed, saved in different formats, etc.

Note: For Microsoft Office Mobile instruction for Word, PowerPoint, Excel and OneNote, please refer to commercially available Microsoft Office Mobile user guides.

Excel Mobile

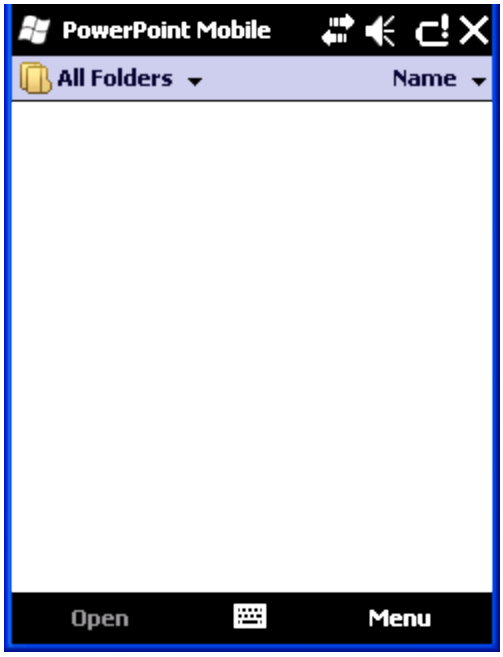
Spreadsheets can be edited, data can be sorted, formatting and changes are preserved. Select Menu | Options to change default settings.

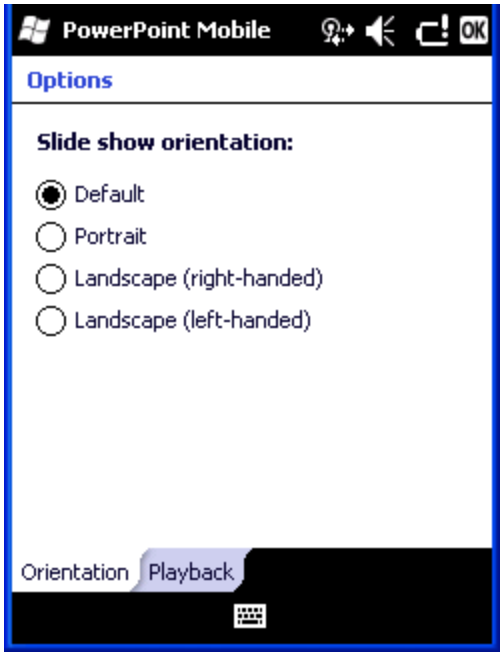




PowerPoint Mobile

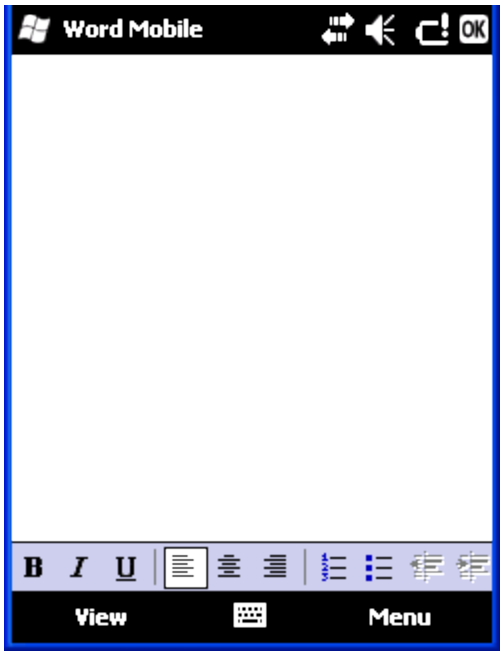
Open, view and edit slides in landscape or portrait format. Zoom and GoTo features enabled. Select Menu | Options to change default settings.

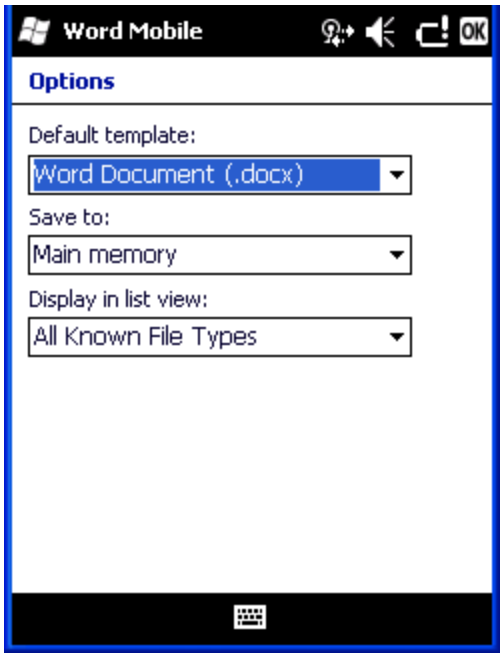




Word Mobile

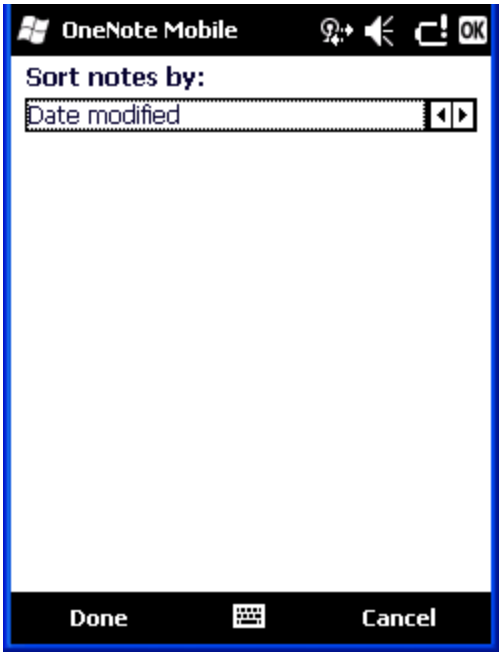
Open, view, edit documents. Formats are saved. Spelling checker, cut and paste are available, undo and redo commands. Select Menu | Options to change default settings.





OneNote Mobile

OneNote is an electronic version of a paper notebook. Select Menu to change default settings.



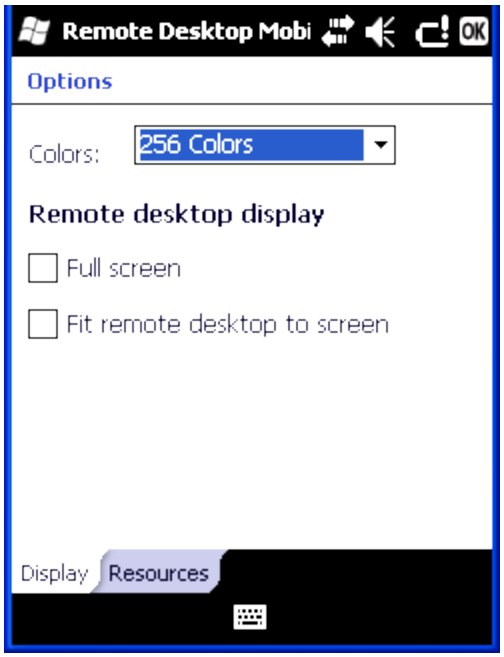
Remote Desktop

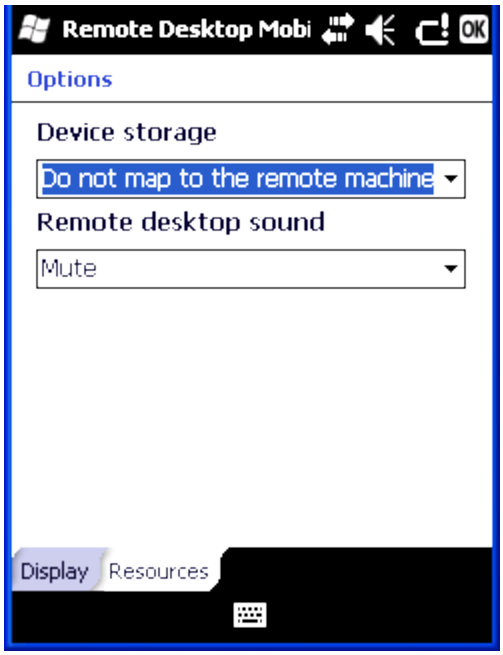
Start | Remote Desktop Mobile

Using Remote Desktop Mobile, you can log on to a remote computer running Terminal Services or Remote Desktop and use all the programs available on that computer from your mobile device. For example, instead of running Word Mobile on the MX7 Tecton, you can run the desktop computer version of Word and access all of the .doc files on that computer from your device.

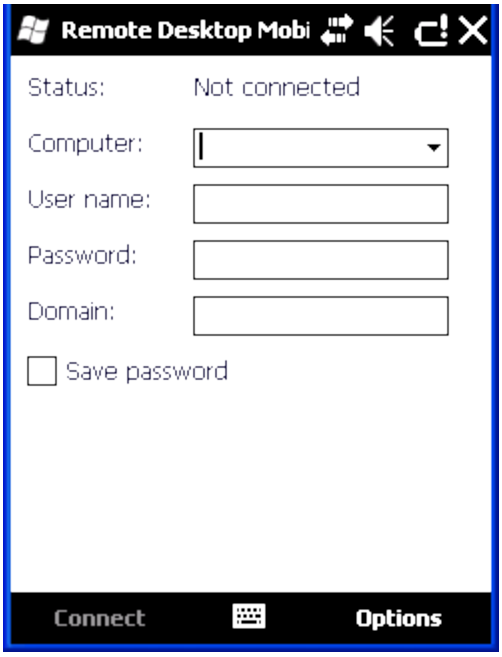
Set Remote Desktop Mobile Options

Before connecting to a remote computer, set Remote Desktop Mobile options to improve display and resource when connected, if desired. Tap **Options** in the taskbar. Tap **OK** when finished.





Connect to a Remote Server



1. Enter the name of the computer to which you want to connect. If needed, enter the port number at the end of the computer name (*remotecomputername*:*portnumber*).
2. Enter the user name, password and domain.
3. Tap the Save password checkbox if it is blank.
4. Tap Connect.

Installing Applications

Applications can be installed on the MX7 Tecton from CAB files or package files.

Package files have some unique characteristics:

- Package files patch the operating system so they become non-volatile. Even a Clean Boot does not remove the programs.
- CAB files are (re)installed after a cold boot, but not after a suspend/resume since the OS was not reset and the CAB files are still in use.
- Packages can contain registry settings which are installed at setup, similar to a CAB file.
- Package files cannot be uninstalled, reinstalled or reverted to an earlier version.
- Packages can be digitally signed.
- A super package file can be created containing multiple package files. Because the MX7 Tecton must reboot after every package installation, a super package may make the installation faster.
- Package files have a .PKG extension, super package files have a .PKS extension.

An unsigned executable (CAB or package file) prompts the user when executed:

> The program is from an unknown publisher. Running it can possibly harm your device. Do you want to continue?

If you trust the program, tap Yes. Otherwise tap No.

Preparation

Package files can be copied to the MX7 Tecton via ActiveSync or they can be installed from the Flash card.

Package File Installation

The MX7 Tecton must be connected to external AC power. IMPORTANT – Because the package file installation actually rewrites portions of the operating system, it is important that power is not interrupted during package file installation. If power is interrupted, the operating system may be damaged, requiring the MX7 Tecton to be returned to LXE for repair.

Use File Explorer to browse to the location of the package file.

1. Tap the package file. Note that by default the file extension is hidden. The package file can be either a single package file or a super package file.
2. The installation process begins.
3. A Validating Update display is presented indicating that an update has been received. The device will verify the update before installing.
4. When prompted, tap **Install Now** to begin the installation.
5. The MX7 Tecton reboots and displays an Update message while the package is being installed.
6. When the installation is completed, the MX7 Tecton reboots again and displays the summary screen.

Refer to troubleshooting below if there is a problem with the package installation.

PKG Installation Troubleshooting

The MX7 Tecton isn't connected to AC power.

Updates cannot be installed while the device is on battery power. To continue, connect the power adapter to the mobile device. The update will be deleted when Cancel is tapped.

Tap Cancel. Connect the MX7 Tecton to AC power and try the update again.

Note: The message that the update will be deleted only means that the scheduled update was deleted. The package file IS NOT deleted and remains on the storage card.

The package is already installed or is an older version than installed.

Status unsuccessful. The update could not be installed because the update has already been installed or the package file is an earlier version than the version currently installed on the MX7 Tecton.

Tap Done to exit the update process.

Note: The message that the update could not be installed and is deleted only means that the scheduled update was deleted. The package file IS NOT deleted and remains on the storage card.

Contact your LXE representative or your system administrator for more information on package versions.

Administration - for AppLock

Introduction

LXE's AppLock is designed to be run on LXE certified Windows based devices only. LXE loads the AppLock program as part of the LXE customer installation process.

MX7 Tecton AppLock is setup by the Administrator by tapping Start | Settings | System | Administration.

Configuration parameters are specified by the AppLock Administrator for the MX7 Tecton end-user. AppLock is password protected by the Administrator.

End-user mode locks the end-user into the configured application or applications. The end user can still reboot the mobile device and respond to dialog boxes. The administrator-specified applications are automatically launched in the specified order and run in full screen mode when the MX7 Tecton boots up.

When the mobile device is reset to factory default values, for example after a cold reset, the Administrator may need to reconfigure the AppLock parameters.

The assumption, in this section, is that the first user to power up a new mobile device is the system administrator.

Note: AppLock Administrator panel file Launch option does not inter-relate with similarly-named options contained in other MX7 Tecton System Panels.

Note: A few applications do not follow normal procedures when closing. AppLock cannot prevent this type of application from closing, but is notified that the application has closed. For these applications, AppLock immediately restarts the application (see Auto Re-Launch) which causes the screen to flicker. If this type of application is being locked, the administrator should close all other applications before switching to end-user mode to minimize the screen flicker.

AppLock is updated periodically as new options become available. Contact your LXE representative for assistance, downloads and update availability.

Setup a New Device

Prerequisites:

- The touch panel must be enabled. Refer to the (Start | Settings | Options | Misc) Touch Panel Disabled setting. If the Touch Panel Disabled option is dimmed, the touch panel cannot be turned off by the user.
- An MX7 Tecton default input method (Input Panel, Transcriber, or custom input method) is assigned.

LXE devices with the AppLock feature are shipped to boot in Administration mode with no default password, thus when the device is first booted, the user has full access to the MX7 Tecton and no password prompt is displayed. After the administrator specifies applications to lock, a password is assigned and the device is rebooted or the hotkey is pressed, the MX7 Tecton switches to end-user mode.

Briefly, the process to configure a new device is as follows:

1. Insert a fully charged battery and press the Power button.
2. Connect an external power source to the device (if required).
3. Adjust screen display, audio volume and other parameters if desired. Install accessories (e.g. handstrap, stylus).
4. Tap Start | Settings | System | Administration icon.
5. Assign a Switch Key (hotkey) sequence for AppLock. See Security Panel.
6. Assign an application on the Application tab screen. More than one application can be assigned.
7. Assign a password on the Security tab screen.
8. Select a view level on the Status Panel screen, if desired.
9. Tap OK.
10. Press the Switch Key sequence to launch AppLock and lock the configured application(s).

The device is now in end-user mode.

Note: AppLock cannot support multiple windows of some applications. Attempting to open multiple windows of RFTerm will cause AppLock to switch to administration mode.

Administration Mode

Administration mode gives full access to the mobile device, hardware and software configuration options.

The administrator must enter a valid password (when a password has already been assigned) before access to Administration mode and configuration options are allowed. The administrator can configure the following options:

- Create/change the keystroke sequence to activate administrator access.
- Create/change the password for administrator access.
- Assign the name of the application, or applications, to lock.
- Select the command line of the application to lock.

In addition to these configuration options, the administrator can view and manage the status logs of AppLock sessions.

Administrator default values for this device:

Administrator Hotkey

Shift+Ctrl+A

Password

none

Application path and name

none

Application command line

none

End User Mode

End-user mode locks the end-user into the configured application or applications. The end user can still reboot and respond to dialog boxes. Each application is automatically launched and runs in full screen mode when the device boots up.

The user cannot unintentionally or intentionally exit the application nor can the end user execute any other applications. Normal application exit or switching methods and all Microsoft defined Windows OS key combinations, such as close (X) icon, File Exit, File Close, Alt-F4, Alt-Tab, etc. are disabled. The Windows OS desktop icons, menu bars, task bar and system trays are not visible or accessible. Task Manager is not available.

If the end-user selects File/Exit or Close from the applications menu bar, the menu is cleared and nothing else happens; the application remains active. Nothing happens when the end-user clicks on the Close icon on the application's title bar and the application remains active.

Note: A few applications do not follow normal procedures when closing. AppLock cannot prevent this type of application from closing, but is notified that the application has closed. For these applications, AppLock immediately restarts the application which causes the screen to flicker. If this type of application is being locked, the administrator should close all other applications before switching to end user mode to minimize the screen flicker.

Windows accelerator keys such as Alt-F4 are disabled.

Passwords

A password must be configured. If the password is not configured, a new device switches into Administration mode without prompting for a password. In addition to the Administrator hotkey press, a mode switch occurs if inaccurate information has been configured or if mandatory information is missing in the configuration.

There are several situations that display a password prompt after a password has been configured.

If the configured hotkey is pressed, the password prompt is displayed. In this case the user has 30 seconds (and within three attempts) to enter a password. If a valid password is not entered within 30 seconds, the password prompt is dismissed and the device returns to end-user mode.

All other situations that present the password prompt do not dismiss the prompt -- this is because the other situations result in invalid end-user operation.

These conditions include:

- If inaccurate configuration information is entered by the administrator, i.e. an application is specified that does not exist.
- If the application name, which is mandatory for end-user mode, is missing in the configuration.
- Invalid installation of AppLock (e.g. missing DLLs).
- Corrupted registry settings.

To summarize, if an error occurs that prevents AppLock from switching to user mode, the password will not timeout and AppLock will wait until the correct password is entered.

AppLock Password Troubleshooting

Contact your LXE representative for assistance when troubleshooting passwords.

End-User Switching Technique

Note: The touch screen must be enabled.

Switchpad Menu

A checkmark indicates applications currently active or available for Launching by the user. When Keyboard is selected, the MX7 Tecton default input method (Input Panel, Transcriber, or custom input method) is activated.

The check to the left of the application name indicates that the application is active.

If the application is listed but does not have a checkmark to the left of the application name, this means the application is configured in AppLock and can be manually launched by tapping on the application name in the list.

Using a Stylus Tap

When the mobile device enters end-user mode, a Switchpad icon (it looks like three tiny windows one above the other) is displayed in the lower right corner of the display. The Switchpad is always visible on top of the application in focus. However, if only one application is configured in AppLock and the Input Panel is disabled the Switchpad is not visible.

When the user taps the Switchpad icon, a menu is displayed showing the applications available to the user. The user can tap an application name in the popup menu and the selected application is brought to the foreground. The previous application continues to run in the background. Stylus taps affect the application in focus only. When the user needs to use the Input Panel, they tap the Keyboard option. Input Panel taps affect the application in focus only.

See Also: Application Panel | Launch | Manual (Launch) and Allow Close

Using the Switch Key Sequence

One switch key sequence (or hotkey) is defined by the administrator for the end-user to use when switching between locked applications. This is known as the **Activation key**. The Activation key is assigned by the Administrator using the Global Key parameter.

When the switch key sequence is pressed on the keypad, the next application in the AppLock configuration is moved to the foreground and the previous application moves to the background. The previous application continues to run in the background. End-user key presses affect the application in focus only.

See Also: Application Panel | Global Key

Hotkey (Activation hotkey)

If the mobile device uses LXE's AppLock to allow the user to switch between applications, the default Activation key is **Ctrl+Spc**. The key sequence switches the focus between one application and another. Data entry affects the application running in the foreground only. Note that the system administrator may have assigned a different key sequence to use when switching applications.

End User Internet Explorer (EUIE)

AppLock supports applications that utilize Internet Explorer, such as .HTML pages and JAVA applications. The end user can run an application by entering the application name and path in Internet Explorer's address bar.

To prevent the end user from executing an application using this method, the address bar and Options settings dialog are restricted in Internet Explorer. This is accomplished by creating an Internet Explorer that is used in end user mode: End-user Internet Explorer (EUIE.EXE). The EUIE executes the Internet Explorer application in full screen mode which removes the address bar and status bar. The Options Dialog is also removed so the end user cannot re-enable the address bar.

The administrator specifies the EUIE by checking the Internet checkbox in the Application tab of the Administrator applet. The internet application should then be entered in the Application text box.

When the Internet checkbox is enabled, the Menu and Status check boxes are available.

Enabling the Menu checkbox displays the EUIE menu which contains navigation functions like Back, Forward, Home, Refresh, etc., functions that are familiar to most Internet Explorer users. When the Menu checkbox is blank, the EUIE menu is not displayed and Navigation functions are unavailable.

When the Status checkbox is enabled, the status bar displayed by EUIE gives feedback to the end-user when they are navigating the Internet.

If the standard Internet Explorer that is shipped with the mobile device is desired, it should be treated like any other application. This means that IEXPLORER.EXE (or equivalent) should be specified in the Application text box and the internet application should be entered in the command line. In this case, do not check the Internet checkbox.

Application Configuration

Settings | System | Administration icon

The default Administrator Hotkey sequence is **Shift+Ctrl+A**.

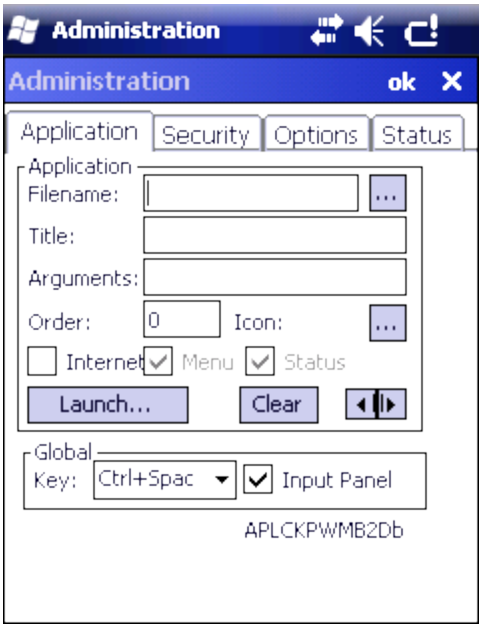
Administrator mode allows access to all features on the device. When the hotkey is pressed to switch into Administrator mode, a password prompt is displayed (if a password has been configured). A password must be entered within 30 seconds (and within three tries) or the password prompt is removed and the device remains in end-user mode with the focus returned to the locked application. Without entry of a valid password, the switch into Administrator mode will not occur.

The password prompt is displayed if a password has been configured. When the valid password is entered, the Administration panel is displayed. When a valid password is not entered within 30 seconds, the user is returned to the System Panel.

If a password has not been configured, the Administrator panel is displayed.

Important: Before setting up multiple instances of the same application, make sure the targeted software application will allow two instances to run at the same time.

Application Panel



Application Panel

Note: AppLock cannot support multiple windows of some applications. Attempting to open multiple windows of RFTerm or Pocket Word will cause AppLock to switch to administration mode.

Use the Application tab options to select the applications to launch when the device boots up in End-user Mode.

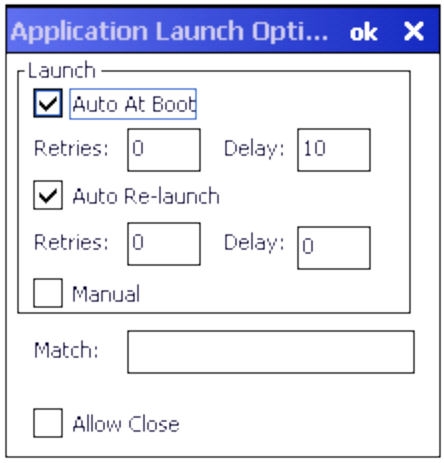
If no application is specified when the Administrator Panel is closed, the MX7 Tecton reboots into Administrator mode. If a password has been set, but an application has not been specified, the user will be prompted for the password before entering administration mode. The password prompt remains on the display until a valid password is entered.

Option	Explanation
Filename	Default is blank. Move the cursor to the Filename text box and either type the application path or tap the Browse button (the … button). The standard Windows Browse dialog is displayed. After selecting the application from the Browse dialog, tap OK.
Title	Default is blank. Enter the Title to be associated with the application. The assumption is that multiple copies of the same application may need unique titles in order to differentiate them in the Switchpad.
Arguments	Default is blank. Enter the command line parameters for the application in the Arguments text box.
Order	Default is 1. Enter the Order in which the application is to be loaded or presented to the end-user. Applications are launched in lowest to highest number order and do not need to be sequential.
Internet	Default is Disabled. Enable the Internet checkbox to use the End-user Internet Explorer (EUIE.EXE) When the checkbox is enabled, the Internet Menu and Internet Status are available. See the section titled End-user Internet Explorer (EUIE) for more details.
Launch Button	See following section titled Launch Button.
Global Key	Default is Ctrl+Spc. Select the Global Key key sequence the end-user is to press when switching between applications. The Global Key default key sequence must be defined by the AppLock Administrator. The Global key is presented to the end-user as the Activation key.

Option	Explanation
Global Delay	Default is 10 seconds. Enter the number of seconds that Applications must wait before starting to run after reboot. *Note: Delay (Global) may not be available in all versions of AppLock. You can simulate a Global Delay function by setting a delay for the first application (lowest Order) launched and setting the delay to 0 for all other applications.*
Input Panel	Default is Disabled. Enable (check) to show the Keyboard option on the Switchpad menu. When enabled the input panel cannot be enabled or disabled for each individual application, and is available to the user for all configured applications.
Clear Button	Tap the Clear button to clear all currently displayed Filename or Application information. The Global settings are not cleared.
Scroll Buttons	Use the left and right scroll buttons to move from application setup screen to application setup screen. The left and right buttons update the information on the screen with the previous or next configured application respectively.

Launch Button

When clicked, displays the Launch options panel for the Filename selected on the Administration panel.



Application Launch Options

Note: Launch order is determined by the Order specified in the Application tab. The Order value does not have to be sequential.

Auto At Boot

Default is Enabled.

Auto At Boot

When enabled, automatically launches (subject to the specified Delay in seconds) the application after the unit is rebooted. If a Delay in seconds is specified, AppLock waits for the specified period of time to expire before launching the application. The Delay default value is 10 seconds; valid values are between 0 “no delay” and a maximum of 999 seconds.

Retries

This is the number of times the application launch will be retried if a failure occurs when the application is automatically launched at bootup. Valid values are between 0 (no tries) and 99 tries or -1 for infinite. Infinite tries ends when the application successfully launches. The default is 0 retries.

Delay

This timer is the time that AppLock waits prior to the initial launch of the selected application when it is automatically launched at bootup. Delay default is 10 seconds. Valid values are between 0 seconds (no delay) and 999 seconds.

The Auto At Boot delay is associated for each application; it will be either a value specified by the Administrator or it will be the delay default value. At startup, when a delay has been assigned for each application, AppLock waits for the delay associated with the first application to expire before launching the first application then AppLock waits for the delay associated with the second application to expire before launching the second application. AppLock continues in this manner until all applications are launched.

Note: A “Global Delay” can be accomplished by setting a timed delay for the first application to be launched (by lowest Order number) and no delay (0 seconds) for all other applications.

Note: Launch order is determined by the Order specified in the Application tab. The Order value does not have to be sequential.

Auto Re-Launch

Default is Enabled.

When enabled for a specific application. automatically re-launches it (subject to the specified Auto Re-Launch Delay in seconds) after it terminates. This option allows the Administrator to disable the re-launch operation. AppLock cannot prevent all applications from closing. When an application that AppLock cannot prevent from closing terminates, perhaps because of an error condition, AppLock re-launches the application when this option is enabled.

Note: If Allow Close is enabled and both Auto Re-launch and Manual (Launch) are disabled, the application cannot be restarted for the end-user or by the end-user after the application terminates.

Retries

Default is 0 tries. Retries is the number of times AppLock will try to re-launch the application. The retry count is reset after an application is successfully launched and controlled by AppLock. Valid values are between 0 (no tries) and 99 tries or -1 for infinite. Infinite tries ends when the application successfully launches.

Delay

Default is 0 seconds (no delay). Delay is the amount of time AppLock waits prior to re-launching an application that has terminated. The delay is specified in seconds. Valid values are between 0 (no delay) and 99 seconds.

AppLock must also be configured to automatically re-launch an application. To AppLock, application termination by the end-user is indistinguishable from application termination for any other reason.

Manual (Launch)

Default is Disabled. Enabling this option allows the end-user to launch the specified application(s). Upon bootup completion an application with Manual enabled is listed on the Switchpad accompanied by a checkmark that indicates the application is currently active or available for Launching. When an application name is tapped by the end-user, the application is launched (if inactive) and brought to the foreground.

Applications set up with Manual (Launch) enabled may or may not be launched at bootup. This function is based on the application's Auto At Boot setting. The applications have been listed as approved applications for end-user manual launch using the Switchpad menu structure. The approved applications are listed on the Switchpad. A checkmark indicates the applications active status.

When Manual (Launch) is disabled for an application, and Allow Close is enabled for the application, when the end-user closes the specific application it is no longer available (shown) on the Switchpad.

When Auto At Boot and Manual (Launch) are both disabled for a specific application, the application is 1) not placed on the list of approved applications for end-user manual launch and 2) never launched, and 3) not displayed on the Switchpad.

Match

Default is blank (Match is not used).

AppLock works by associating display windows with the launched process ID. If an application uses different process IDs for windows it creates, the Match field must be used.

Use the Match field to specify up to 32 characters of the class name for the application.

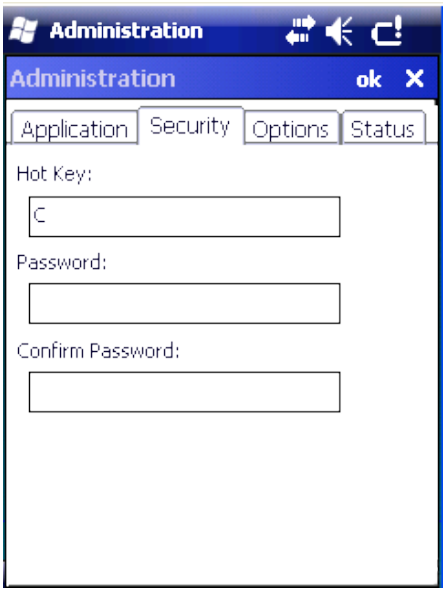
For example, DOS applications using a standard DOS display box should specify **condev_appcls** in the Match textbox.

Allow close

Default is Disabled. When enabled, the associated application can be closed by the end-user.

This option allows the administrator to configure applications that consume system resources to be terminated if an error condition occurs or at the end-user's request. Error conditions may generate a topmost popup requiring an end-user response, memory resource issues requiring an end-user response, etc. Also at the administrator's discretion, these types of applications can be started manually (see Manual [Launch]) by the end-user.

Security Panel



Security Panel

Setting an Activation Hotkey

Specify the hotkey sequence that triggers AppLock to switch between administrator and user modes and the password required to enter Administrator mode. The default hotkey sequence is Shift+Ctrl+A.

A 2nd key keypress is an invalid keypress for a hotkey sequence.

Move the cursor to the Hot Key text box. Enter the new hot key sequence by first pressing the Shift state key followed by a normal key. The hotkey selected must be a key sequence that the application being locked does not use. The hotkey sequence is intercepted by AppLock and is not passed to the application.

Input from the keyboard or Input Panel is accepted with the restriction that the normal key must be pressed from the keyboard when switching modes. The hotkey sequence is displayed in the Hot key text box with <Shift>, <Alt>, and <Ctrl> text strings representing the shift state keys. The normal keyboard key completes the hotkey sequence. The hotkey must be entered via the keypad. Some hotkeys cannot be entered via the Input Panel. Also, hotkeys entered via the SIP[1] are not guaranteed to work properly when switching operational modes.

For example, if the <Ctrl> key is pressed followed by <A>, Ctrl+A is entered in the text box. If another key is pressed after a normal key press, the hotkey sequence is cleared and a new hotkey sequence is started.

A normal key is required for the hotkey sequence and is unlike pressing the normal key during a mode switch; this key can be entered from the SIP when configuring the key. However, when the hotkey is pressed to switch user modes, the normal key must be entered from the keypad; it cannot be entered from the SIP.

Setting a Password in the Security Panel

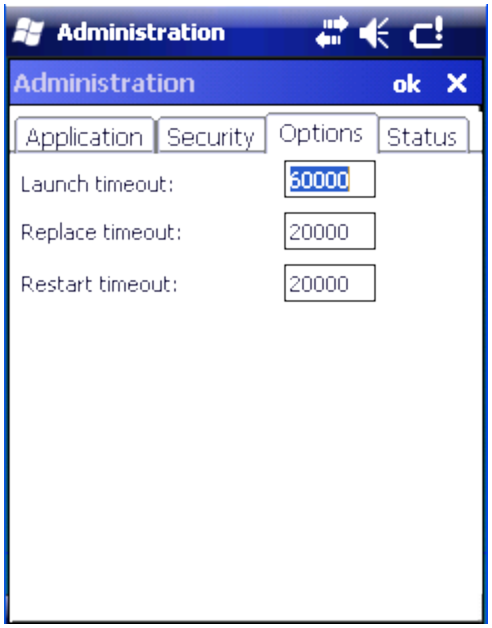
Move the cursor to the Password text box. The passwords entered in the Password and Confirm Password fields must match. Passwords are case sensitive.

[1] Soft Input Panel. The keyboard that appears on the display when the cursor is placed in a text input box.

When the user exits the Administrator panel, the two passwords are compared to verify that they match. If they do not match, a dialog box is displayed notifying the user of the error. After the user closes the dialog box, the Security Panel is displayed and the password can then be entered and confirmed again. If the passwords match, the password is encrypted and saved.

See "Passwords" on page 182

Options Panel



Options Panel

AppLock uses 3 timeout values when locking applications:

Launch timeout -- the time to wait for an application to initially launch before timing out. Default value is 60000 milliseconds (60 seconds).

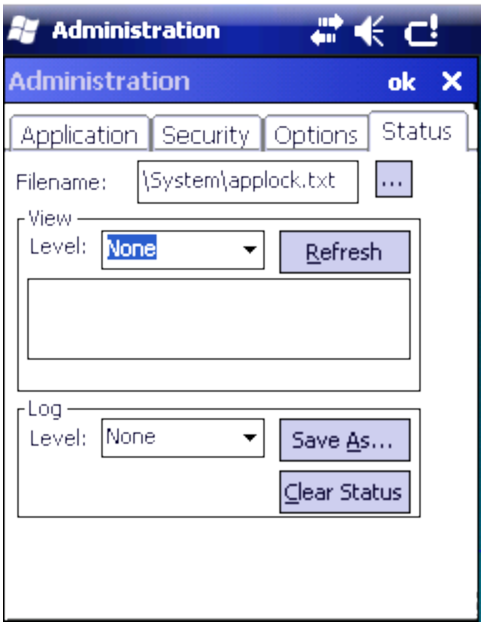
Replace timeout -- the time to wait for an application to replace the current window with another one before timing out. Default value is 20000 milliseconds (20 seconds).

Restart timeout -- the time to wait for an application to restart itself before timing out. Default value is 20000 milliseconds (20 seconds).

Status Panel

Use the Status panel to view the log of previous AppLock operations and to configure which messages are to be recorded during AppLock operation.

Status information is stored in a specific location on the storage device and in a specific logfile specified by the Administrator. For this reason, the administrator can configure the type of status information that is logged, as well as clear the status information.



Status Panel

Move the cursor to the Filename text box and either type the logfile path or tap the Browse button (the … button). The standard Windows OS Browse dialog is displayed. After selecting the logfile from the Browse dialog, tap OK.

View

Error	Error status messages are logged when an error occurs and is intended to be used by the administrator to determine why the specified application cannot be locked.
Process	Processing status shows the flow control of AppLock components and is mainly intended for LXE Customer Service when helping users troubleshoot problems with their AppLock program.
Extended	Extended status provides more detailed information than that logged by Process Logging.
All	All messages are displayed.

Tap the Refresh button after changing from one view level to another. The filtered records are displayed, all others are not displayed.

Log

Note: If a level higher than Error is selected, the status should be cleared frequently by the administrator.

In addition to the three view levels the administrator can select that all status information be logged or turn off all status information logging completely. The system default is 'None'; however to reduce registry use, the administrator may want to select 'None' after verifying the configuration. Tap the Clear button to clear the status information from the registry.

- None
- Error
- Processing
- Extended
- All

Save As

When the 'Save As'… button is selected, a standard 'Save As' dialog screen is displayed. Specify the path and filename. If the filename exists, the user is prompted whether the file should be overwritten. If the file does not exist, it is created.

See "AppLock Error Messages" on page 330

Troubleshooting AppLock

The mobile device won't switch from Administration mode to end-user mode.

- If the configuration is valid for one application but not the other, the switch to end-user mode fails. AppLock stays in Administration mode and is stopped until the Administrator password is entered.
- If two copies of the same application are configured, but the application only allows one copy to run at a time, for example Microsoft Pocket Word and LXE RFTerm, the switch to end-user fails. AppLock stays in Administration mode and is stopped until the Administrator password is entered.

The hotkey sequence needed is not allowed. What does this mean?

When the Administrator is selecting a hotkey sequence to use when switching user modes, they are not allowed to enter key combinations that are reserved by installed software applications. LXE has validated RFTerm key combinations ONLY.

When RFTerm is installed on the mobile device and an RFTerm restricted key sequence is specified as a hotkey sequence by the Administrator, the following error message is displayed in a message box:

```
Selected hotkey is not allowed. Please reenter.
```

When RFTerm is not installed on the mobile device, the RFTerm keys are not restricted from use.

Can't locate the password that has been set by the administrator?

Contact your LXE representative for assistance.

See "AppLock Error Messages" on page 330

Using ActiveSync

Introduction

Requirement : ActiveSync (version 4.5 or higher for **Windows XP** desktop/laptop computers) must be resident on the host (desktop/laptop) computer. **Windows Mobile Device Center** (version 6.1 or higher) is required for a **Windows Vista/Windows 7** desktop/laptop computer. ActiveSync and Windows Mobile Device Center for the PC is available from the Microsoft website. Follow their instructions to locate, download and install ActiveSync or Windows Mobile Device Center on your desktop computer.

Note: For readability in this section, ActiveSync will be used in instructions and explanations. If you have a Windows Vista or Windows 7 operating system on your desktop/laptop, replace ActiveSync with Windows Mobile Device Center.

Using Microsoft ActiveSync, you can synchronize information on your desktop computer with the MX7 Tecton and vice versa. Synchronization compares the data on your mobile device with your desktop computer and updates both with the most recent data.

For example, you can:

- Back up and restore your device data.
- Copy (rather than synchronize) files between your device and desktop computer.
- Control when synchronization occurs by selecting a synchronization mode. For example, you can synchronize continually while connected to your desktop computer or only when you choose the synchronize command.

By default, ActiveSync does not automatically synchronize all types of information. Use ActiveSync Options to specify the types of information you want to synchronize. The synchronization process makes the data (in the information types you select) identical on both your desktop computer and your device.

When installation of ActiveSync is complete on your desktop computer, the ActiveSync Setup Wizard begins and starts the following processes:

- connect your device to your desktop computer,
- set up a partnership so you can synchronize information between your device and your desktop computer, and
- customize your synchronization settings.

Because ActiveSync is already installed on your device, your first synchronization process begins automatically when you finish setting up your desktop computer in the ActiveSync wizard. For more information about using ActiveSync on your desktop computer, open ActiveSync, then open ActiveSync Help.

Initial Setup

The initial setup of ActiveSync must be made via a USB connection. Partnerships can only be created using USB cable connection.

Connect via USB

The default connection type is **USB Client**

This is the only connection option supported on the MX7 Tecton.

To verify it is set to USB, select

Start | Settings | Connections | USB to PC

Ensure the checkbox for "Enable advanced network functionality" is checked. Tap OK to return to the Connections panel.

Connect the USB cable to the PC (the host) and the mobile device (the client) as detailed below. USB will start automatically when the USB cable is connected.

When the MX7 Tecton loses connection, e.g. enters Suspend Mode, etc., the connection to ActiveSync will be lost. When the MX7 Tecton resumes, the ActiveSync session will automatically re-connect.

Cable for USB ActiveSync Connection:

MX7052CABLE - MX7 Tecton Charge/Comm Interface Cable with USB Client port for ActiveSync. USB end of cable connects to PC/Laptop USB port.

- Connect the MX7 Tecton end of the cable to the I/O port on the bottom of the MX7 Tecton
- The USB type A connector on the cable connects to a USB port on a PC or laptop.
- It is not necessary to connect the power connector on the cable in order to use ActiveSync.

Explore

From the ActiveSync Dialog on the Desktop PC, tap the Explore button, which allows you to explore the mobile device from the PC side, with some limitations. You can copy files to or from the mobile device by drag-and-drop. You will not be allowed to delete files or copy files out of the \Windows folder on the mobile device. (Technically, the only files you cannot delete or copy are ones marked as system files in the original build of the Windows image. This, however, includes most of the files in the \Windows folder).

Backup Data Files using ActiveSync

Use the following information to backup data files from the mobile device to a desktop or laptop PC using the appropriate cable and Microsoft's ActiveSync.

Prerequisites

A partnership between the mobile device and ActiveSync has been established.

- A desktop or laptop PC with an available USB port and a mobile device with a USB port. The desktop or laptop PC must be running Windows XP or greater.
- Use the LXE-specific USB cable as listed in Connect Via USB.

Connect

Connect the USB cable to the PC (the host) and the mobile device (the client).

The "Get Connected" wizard on the host PC checks COM ports to establish a connection for the first time.

Note: USB synchronization will start automatically when the cable is connected.

Disconnect

- Disconnect the cable from the MX7 Tecton.
- Open the status bar icon in the lower right hand corner of the status bar. Then tap the Disconnect button.

When the MX7 Tecton loses connection, e.g. enters Suspend Mode, etc., the connection to ActiveSync will be lost. When the MX7 Tecton resumes, the ActiveSync session will automatically re-connect.

MX7 Tecton with a Disabled Touchscreen

A MX7 Tecton touchscreen can be disabled (using the Options control panel Misc tab). In these cases, it may be easier to configure the MX7 Tecton using ActiveSync and LXEConnect rather than using the MX7 Tecton keypad only.

Reset and Loss of Host Re-connection

ActiveSync assigns a partnership between a client and a host computer. A partnership is defined by two objects – a unique computer name and a random number generated when the partnership is first created. An ActiveSync partnership between a unique client can be established to two hosts.

When the mobile device is reset (return to default settings), the random number is deleted – and the partnership with the last one of the two hosts is also deleted. The host retains the random numbers and unique names of all devices having a partnership with it. Two clients cannot have a partnership with the same host if they have the same Device Name.

If the reset mobile device tries to reestablish the partnership with the same host PC, a new random number is generated for the mobile device and ActiveSync will insist the unique name of the mobile device be changed. If the mobile device is associated with a second host, changing the name will destroy that partnership as well. This can cause some confusion when re-establishing partnerships with hosts.

Troubleshooting ActiveSync

ActiveSync on the host says that a device is trying to connect, but it cannot identify it

One or more control lines are not connected. This is usually a cable problem, but on a laptop or other device, it may indicate a bad serial port.

If the MX7 Tecton is connected to a PC by a cable, disconnect the cable from the MX7 Tecton and reconnect it again.

Check that the correct connection is selected.

See "Reset and Loss of Host Re-connection" on page 197

ActiveSync indicator on the host (disc in the toolbar tray) turns green and spins as soon as you connect the cable, before tapping the Connect icon.

One or more control lines are tied together incorrectly. This is usually a cable problem, but on a laptop or other device, it may indicate a bad serial port.

ActiveSync indicator on the host turns green and spins, but connection never occurs

Check that the correct connection is selected.

-or-

Incorrect or broken data lines in cable.

ActiveSync indicator on the host remains gray

Solution 1: ActiveSync icon on the PC does not turn green after connecting USB cable from MX7 Tecton.

1. Disconnect MX7 Tecton USB cable from PC.
2. Suspend/Resume or Restart the MX7 Tecton.
3. In ActiveSync | File | Connection Settings on PC disable Allow USB Connections and click OK.
4. Re-enable Allow USB Connections on the PC and click OK.
5. Reconnect USB cable from MX7 Tecton to PC.

Solution 2: The host doesn't know you are trying to connect. May mean a bad cable, with no control lines connected, or an incompatible baud rate. Try the connection again, with a known good cable.

Configuring the MX7 Tecton with LXEConnect

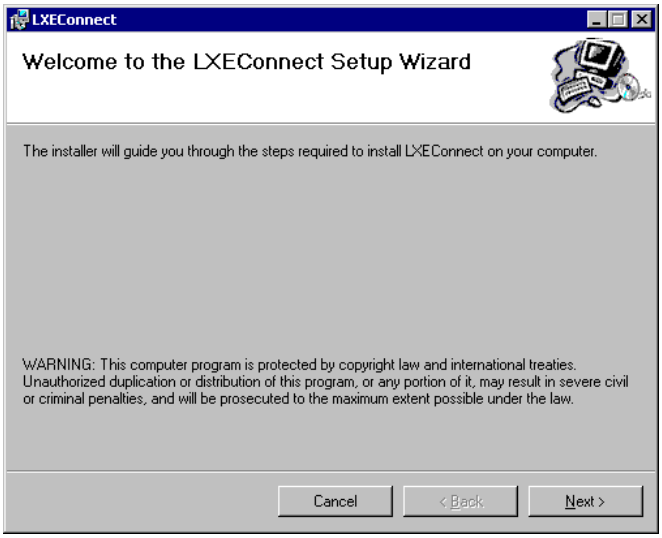
LXEConnect allows a user to view the MX7 Tecton screen remotely from a PC using an ActiveSync connection:

Requirements: ActiveSync (version 4.5 or higher for Windows XP desktop/laptop computers) must be resident on the host (desktop/laptop) computer. Windows Mobile Device Center (version 6.1 or higher) is required for a Windows Vista/Windows 7 desktop/laptop computer.

ActiveSync is already installed on the MX7 Tecton. The MX7 Tecton is preconfigured to establish a USB ActiveSync connection to a host PC when the USB cable is attached to the MX7 Tecton and the host PC.

Install LXEConnect

1. Contact your LXE representative for the LXEConnect files.
2. Download the files to a location on your host PC hard drive.
3. Execute the setup.exe file that was copied to the host PC. This setup program installs the LXEConnect utility.


LXEConnect
Welcome to the LXEConnect Setup Wizard
The installer will guide you through the steps required to install LXEConnect on your computer.
WARNING: This computer program is protected by copyright law and international treaties. Unauthorized duplication or distribution of this program, or any portion of it, may result in severe civil or criminal penalties, and will be prosecuted to the maximum extent possible under the law.
Cancel
< Back
Next >

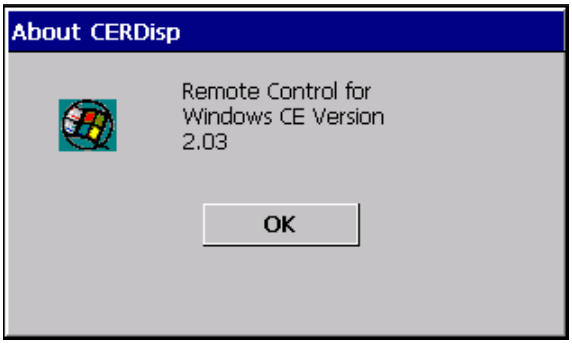
LXEConnect Setup

4. Follow the on screen installation prompts. The default installation directory is C:\Program Files\LXE\LXEConnect.
5. When the installation is complete, create a desktop shortcut to the following file: C:\Program Files\LXE\L-XEConnect\LXEConnect.exe. If a different directory was selected during installation, please substitute the appropriate directory.
6. LXEConnect is now installed on the host PC and ready to use.

Using LXEConnect

1. Power up the MX7 Tecton.
2. Connect the MX7 Tecton to the host PC using the USB connection cable. Once connected, the ActiveSync dialog box appears and the ActiveSync connection is automatically established.
3. Select “No” for partnership when prompted. Dismiss any ActiveSync dialog boxes warning a partnership is not set up. It is not necessary to establish a partnership to use LXEConnect. However, if a partnership is desired for other reasons, one may be established now.

4. Double-click the LXEConnect icon that was created on the PC desktop.
5. LXEConnect launches.



Example LXEConnect Notice

6. Click the OK button to dismiss the About CERDisp dialog box (see *Example LXEConnect Notice* image above) on the MX7 Tecton desktop by clicking the OK button in the LXEConnect window on the PC desktop. The dialog box automatically times out and disappears after approximately 20 seconds.

LXEConnect Desktop

7. The MX7 Tecton can now be configured from the LXEConnect window. Input from the PC's mouse and keyboard are recognized as if they were attached to the MX7 Tecton.
8. When the remote session is completed, terminate the LXEConnect program by selecting File | Exit or clicking on the X in the upper right hand corner to close the application, then disconnect the ActiveSync cable.

Launch Utility

Introduction

The launch utility on the MX7 Tecton has two functions:

- Process registry based Launch items
- Process script based Launch items.

The registry based Launch items are processed before the script based Launch items.

Note: There is no Warm Boot/Warm Start/Warm Reset (as used in other versions of Microsoft operating systems) function available for Windows Mobile devices. Suspend/resume performs the equivalent function.

Registry Based Launch Items

Note: The Registry based Launch items (documented here) are processed before the Script Based Launch items.

The Launch utility can use registry entries to auto-launch Windows CAB files. These CAB files exist as separate files from the main installation image, and are copied to the device using ActiveSync, or using the optional SD card. The CAB files are copied into the folder System, which is the internal Flash drive. Then, information is added to the registry, if desired, to make the CAB file auto-launch at startup.

The registry information needed is under the key

HKEY_LOCAL_MACHINE\SOFTWARE\LXE\Persist

The main subkey is any text, and is a description of the file. Then the values are added:

Value	Need	Data Type	Description
FileName	Required	String	Name of the CAB file, with full path (usually \System)
Installed	Required	DWORD	Starts as 0, changed to 1 when the CAB file is installed
FileCheck	Required	String	File name, with full path, of a file installed by the CAB file. If this file is not found, Launch assumes the CAB file is not installed or memory was lost.
Order	Optional	DWORD	Determines sequence of installation. Order=0 is installed first, order=99 is installed last.
Delay	Optional	DWORD	Delay, in seconds, after this item is installed and before the next one is installed. If the install fails (or is not found) the delay does not occur.
PCMCIA	Optional	DWORD	1=power up PCMCIA/CF slot after installation

The auto-launch process is as follows.

1. The launch utility opens the registry database and reads the list of CAB files to auto-launch.
2. First it looks for **FileName** to see if the CAB file is present.
    - If not, the registry entry is ignored.
    - If it is present, and the **Installed** flag is not set, auto-launch makes a copy of the CAB file (since it gets deleted by installation), and runs the Microsoft utility WCELOAD to install it.
3. If the **Installed** flag is set, auto-launch looks for the **FileCheck** file.
    - If it is present, the CAB file is installed and that registry entry is complete..
    - If the **FileCheck** file is not present, memory has been lost, and the utility calls WCELOAD to reinstall the CAB file.
4. This process repeats for the next entry in the registry, until all registry entries are analyzed.

Notes:

- To force execution every time, use a **FileCheck** of "**dummy**", which is never found, forcing the item to execute. If an **AUTOEXEC.BAT** file is found, the terminal runs it by default.
- For persist keys specifying .**EXE** or .**BAT** files, the executing process is started, and then **Launch** continues, leaving the loading process to run independently.
- For other persist keys (including **.CAB** files), **Launch** waits for the loading process to complete before continuing. This is important, for example, to ensure that a .CAB file is installed before the .EXE files from the .CAB file are run.
- The **Order** field is used to force a sequence of events; **Order=0** is first, and **Order=99** is last. Two items which have the same order are installed in the same pass, but not in a predictable sequence.
- The **Delay** field is used to add a delay after the item is loaded, before the next is loaded. The delay is given in seconds, and defaults to **0** if not specified. If the install fails (or the file to be installed is not found), the delay does not occur.
- The **PCMCIA** field is used to indicate that the file (usually a CAB file) being loaded is a radio driver, and the PCMCIA slots must be started after this file is loaded. By default, the PCMCIA slots are off on power up, to prevent the "Unidentified PCMCIA Slot" dialog from appearing. Once the drivers are loaded, the slot can be turned on. The value in the **PCMCIA** field is a DWORD, representing the number of seconds to wait after installing the CAB file, but before activating the slot (a latency to allow the thread loading the driver to finish installation). The default value of **0** means the slot is not powered on. The default values for the default radio drivers (listed below) is **1**, meaning one second elapses between the CAB file loading and the slot powering up.
- Note that the auto-launch process can also launch batch files (***.BAT**), executable files (***.EXE**), registry setting files (***.REG**), or sound files (***.WAV**). The mechanism is the same as listed above, but the appropriate OS application is called, depending on file type.

Launch Startup options

The Launch utility uses registry entries to enable or disable startup options. These flags are located in the registry key:

HKEY_LOCAL_MACHINE\Software\LXE\Launch

These can be configured using RegEdit. The options are as follows:

Value	Ship Default	LTK Default	Description
LaunchPSM	1	0	Execute the Persist keys
JumpStart	1	0	Look for and execute JumpStart scripts
LaunchStart	1	0	Execute any auto-install files in \System\Startup
TimeService	0	0	Launches the GrabTime utility as a service, so that the time and date are periodically automatically updated.

It can often be useful to disable these as necessary, to troubleshoot system startup.

Example

The following example loads and launches RFTerm.

```
;; ------- RFTerm support
[HKEY_LOCAL_MACHINE\SOFTWARE\LXE\Persist\LXE TE]
"FileName"="\\System\\RFTERM.CAB"
"Installed"=dword:0
"FileCheck"="\\WINDOWS\\LXE\\RFTERM.EXE"
"Order"=dword:11
;; run the app after it has loaded and client device is ready
[HKEY_LOCAL_MACHINE\SOFTWARE\LXE\Persist\RFTERM]
"FileName"="\\WINDOWS\\LXE\\RFTERM.EXE"
"Installed"=dword:0
"FileCheck"="ALWAYSEXEC"
"Order"=dword:40
"Delay"=dword:1
```

Script Based Launch Items

Note: The Script Based Launch items (documented here) are processed after the Registry Based Launch items (documented earlier).

The Enhanced (script based) portion of the Launch utility provides several features:

- Launch .CAB file
- Run .EXE file
- Run .EXE file using specified parameters
- Run .BAT file
- Process .REG file
- Copy file, with or without overwriting of existing file
- Delete file
- Create directory
- Remove directory
- Add / Update a registry field
- Delete a registry field
- Add a registry subkey
- Delete a registry key
- Display an on-screen message; message requires OK to continue
- Conditional commands, based on existence of file or folder
- Conditional commands, based on device type
- End block of conditional commands
- Create a shortcut
- Perform a Suspend/Resume (Restart is not useful in this context)

The script developer has the option of pausing script file execution until the current action completes, or continuing script file processing. The script developer is also able to pause for a specified number of milliseconds between commands.

The utility also processes .REG files, using the same format as the legacy Launch Utility. It does this by calling the RegLoad utility. It can also process .BAT files, by calling the Command Prompt utility.

This utility allows the user to configure separate processing for Suspend/Resume and Cold Boot.

- By default, Enhanced Launch processes both registry entries and scripts, if present. There are registry settings to enable/disable processing of both types of files.
- Script files may have the extension .CLD (for cold boot) or .WRM for warm boot. With this extension, they may be clicked to execute from the File Explorer. When clicked directly, the extensions do not matter (a script ending in .CLD does not have to be preceded by a suspend/resume).

Enhanced Launch Utility Use

The Enhanced Launch Utility can be used at OS startup to execute commands from a script file or to launch programs. The user can configure scripts or registry entries for different operation after Warm Boot and Restart. Use of scripts and registry entries is documented in the following sections.

File Names

From a Restart, Launch tries to find the file JmpStart.cld, but from a Warm Boot it looks for JmpStart.wrm. The Launch program can also be run manually. Unless it is given a file as part of the command line it tries to run Launch.txt. The script file may be in ASCII or Unicode.

When trying to find a script file, Launch looks in the following locations (in sequence):

root directory of the Flash (\System\JmpStart.xxx)

root directory of the SD card (\SD Card\JmpStart.xxx).

In addition, a script file can be written (with a .cld or .wrm extension), and can be double-clicked to run from the File Explorer.

Command line structure

Each command takes up one line. Every command uses the format:

```
COMMAND,PARAMETER1,PARAMETER2,...etc.
```

Parameters are separated by a single comma. If a parameter requires a comma within it, the whole parameter must be enclosed in quote marks ("). Extra spaces are ignored between the comma and the next parameter.

For Example

To delete a file called Ive, got, commas, in, my, name.txt, use the command

```
delete,"Ive, got, commas, in, my, name.txt".
```

Enclosing quotes are used to allow commas inside a parameter, but are removed prior to executing the command. Thus, delete,deleteme.txt is the same as delete,"deleteme.txt". If a parameter requires a quote mark within it, the whole parameter must first be enclosed within quote marks, and the required quote mark is represented by two quote marks (""). For example, to place the message This is how you display "quote marks" on the screen, use the command

message,This is a heading,"This is how you display ""quote marks""".

The case of a command is ignored, so delete is the same as DELETE and DeLeTe.

Comments

Any line that starts with a semicolon (;), a slash (‘/’) or an asterisk (*) is treated as a comment, and ignored by Launch.

Launch also ignores any extra parameters (more than the required number) in a command. It is not recommended that comments be placed on the end of lines as any future changes could render your script files incompatible.

Blank lines are also ignored.

Commands Supported by Launch

Copy	ElseIfFIile	IfFile	Mkdir
Delete	EndIf	IfTerm	Rmdir
DelRegData	EndIfFile	Launch	SetRegData
DelRegKey	EndIfTerm	LaunchCmd	SetRegKey
ElseIf	FCopy	Message	Shortcut

The commands supported by Launch are detailed below. Square brackets indicate that a parameter is optional. Characters in Italics represent a variable, and not a literal.

Copy

Description

Copies a file but does not overwrite an existing file.

Syntax

Copy,*source-file*,*destination-file*

Parameters

source-file:	The file to be copied, including its path
destination-file:	The destination path and filename

Example

```
copy,\Storage Card\MyData.dat,\Temp\MyData.dat
```

Notes

If the destination file already exists, it is not overwritten, and no error is given.

If the source file is blank, a zero-byte file is created.

Delete

Description

Deletes the specified file.

Syntax

Delete,*source-file*

Parameters

source-file:	The file to be deleted, including its path

Example

```
delete,\Temp\MyData.dat
```

DelRegData

Description

Deletes a specified registry data field.

Syntax

Delregdata,*key,subkey,field*

Parameters

key: The abbreviated major registry key where you want to delete a field. Can be one of:

- **cr** or **hkcr** (HKEY_CLASSES_ROOT)
- **cu** or **hkcu** (HKEY_CURRENT_USER)
- **lm** or **hklm** (HKEY_LOCAL_MACHINE).

The case of *key* doesn't matter

subkey: The subkey that holds the field you want to delete.

field: The field that you want to delete.

Example

```
delregdata,LM,Software\WidgetsPlc\OurApp,AppName
```

Notes

An error isn't displayed if you specify a non-existent field, but is displayed if you specify a non-existent key or subkey.

DelRegKey

Description

Deletes a specified registry subkey.

Syntax

DelRegKey,*key,subkey*

Parameters

key: The abbreviated major registry key where you want to delete the subkey. Can be one of:

- **cr** or **hkcr** (HKEY_CLASSES_ROOT)
- **cu** or **hkcu** (HKEY_CURRENT_USER)
- **lm** or **hklm** (HKEY_LOCAL_MACHINE).

The case of *key* doesn't matter

subkey: The subkey you want to delete.

Example

```
delregkey,LM,Software\WidgetsPlc\OurApp
```

Notes

Deletes the specified subkey and all of its contents (if any).

ElseIf

Description

Begins conditional command block, executed only if the previous IF command was FALSE.

Syntax

```
ElseIf
```

Parameters

None

Example

See **IfFile** , below

Notes

Results are unpredictable if not paired properly with **If…** command.

ElseIfFIile

Description

Begins conditional command block executed only if the file specified in the previous IfFile does not exist.

Syntax

```
ElseIfFile
```

Parameters

None

Example

See **IfFile** , below

Notes

Results are unpredictable if not paired properly with **IfFile** command.

EndIf

Description

Ends conditional command block begun with the previous IF command.

Syntax

```
EndIf
```

Parameters

None

Example

See **IfFile**, below

Notes

Results are unpredictable if not paired properly with **If…** command.

EndIfFile

Description

Ends conditional command block begun with the previous IF command.

Syntax

```
EndIfFile
```

Parameters

None

Example

See **IfFile** , below

Notes

Results are unpredictable if not paired properly with **IfFile** command.

EndIfTerm

Description

Ends conditional command block executed only if the device type specified in **IfTerm** matches.

Syntax

```
EndIfTerm
```

Parameters

None

Example

See **IfTerm** , below

Notes

Results are unpredictable if not paired properly with **IfTerm** command.

FCopy

Description

Copies a file, overwriting any existing file.

Syntax

fcopy,*source-file,destination-file*

Parameters

source-file:	The file to be copied, including its path
destination-file:	The destination path and filename

Example

```
fcopy,\Storage Card\MyData.dat,\Temp\MyData.dat
```

Notes

If the destination file already exists it is overwritten.

If the source file is blank, a zero-byte file is created.

IfFile

Description

Begins the conditional execution of a block of commands only if the specified file exists.

Syntax

`IfFile,`*`file`*

Parameters

file: The path and filename to determine if the commands should be executed

Example

```
IfFile,\System\MyData.dat
     any number of commands, executed if file exists
ElseIfFile
     any number of commands, executed if file does not exist
EndIfFile
```

Notes

If the file already exists the commands are executed.

This test does not care if file is a file or directory.

Nesting is supported.

IfTerm

Description

Begins the conditional execution of a block of commands only if the terminal matches the specified terminal type.

Syntax

IfTerm,*terminal*

Parameters

terminal: The terminal type to determine if the commands should be executed

Example

```
IfTerm,MX3X
     any number of commands
EndIfTerm
```

Notes

If the terminal type is identical (not case-dependent) the commands are executed.

Nesting with **IfFile** is supported. Nesting with **IfTerm** is meaningless.

Launch

Description

Runs a program.

Syntax

Launch,*program*,*wait-code*

Parameters

program: The full path and filename of the program to be run.

wait-code Tells Launch how to behave when the program is running.

w(ait) causes Launch to stop processing the script until the program has finished executing.

c(ontinue) makes Launch continue processing the script while the program is executing.

Example

```
launch,\Windows\Calc.exe,w
```

Notes

This differs from **LaunchCmd** in that **Launch** has no parameters.

LaunchCmd

Description

Runs a program with arguments.

Syntax

Launchcmd,*program*,*arguments*,*wait-code*

Parameters

program:	The full path and filename of the program to be run.
wait-code	Tells Launch how to behave when the program is running.
	w(ait) causes Launch to stop processing the script until the program has finished executing.
	c(ontinue) makes Launch continue processing the script while the program is executing.
arguments:	The command line arguments for program.

Example

```
launchcmd,\Windows\Pword.exe,\My Documents\Doc1.doc,w
```

Notes

This differs from **Launch** in that **LaunchCmd** allows parameters.

Message

Description

Displays a message on the screen.

Syntax

Message,*message-title*,*message-body*

Parameters

message-title:	A heading for the message. Can be left empty.
message-body:	The main body of the message. To display a message over multiple lines, use the \n character combination at the end of each line. To display a single backslash use two together (\\).

Example

```
message,This is a message,"This is the first line,\nand this is the second"
```

Notes

Displaying a message pauses the execution of the script file until the message is OK'd. This is displayed with a modal dialog.

Mkdir

Description

Creates a directory.

Syntax

Mkdir,*dir*

Parameters

dir: The full path and name of the directory to be created.

Example

```
mkdir,\Program Files\MyApp
```

Notes

A new directory cannot be created if its parent directory doesn't exist.

For example, to create a directory called *MyApp* with a subdirectory called *SubDir1*, use **mkdir,\MyApp** followed by **mkdir,\MyApp\SubDir1**.

Rmdir

Description

Removes a directory.

Syntax

```
Rmdir,dir
```

Parameters

dir: The full path and name of the directory to be removed.

Example

```
rmdir,\Program Files\MyApp
```

Notes

A directory cannot be removed if it contains files or subdirectories.

SetRegData

Description

Adds or updates a data field in the registry.

Syntax

Setregdata,*key*,*subkey*,*type*,*field*,*data*[,*data2*][,*data3*]...

Parameters

key: The abbreviated major registry key where you want to create/update the subkey. Can be one of:

- **cr** or **hkcr** (HKEY_CLASSES_ROOT)
- **cu** or **hkcu** (HKEY_CURRENT_USER)
- **lm** or **hklm** (HKEY_LOCAL_MACHINE).

The case of *key* doesn't matter

subkey: The subkey you want to create/update a field in.

type: The data type of the field you wish to create/update. Can be s (for string value), dd (for decimal value), dx (for hexadecimal value) or b (for binary value). The case of *type* doesn't matter. If you're altering an existing field, *type* can be different from the current type

field: The name of the new field to be created/updated.

data: The value of the field being created. This depends on the *type* of field. Binary fields can have many values (up to 2000 bytes). In this case the data field holds the number of bytes in the binary field, and each byte is given as a subsequent parameter in hexadecimal (*data2, data3* etc.).

Example

```
Setregdata,LM,WidgetsPlc\Info,s,AppName,The Widget Program
Setregdata,LM,WidgetsPlc\Info,dx,HexField,FA5B
Setregdata,LM,WidgetsPlc\Info,b,5,d3,62,58,f1,9c
```

SetRegKey

Description

Adds a sub key to the registry.

Syntax

`Setregkey``,`*`key`*`,`*`subkey`*

Parameters

key: The abbreviated major registry key where you want to create the subkey. Can be one of:

- **cr** or **hkcr** (HKEY_CLASSES_ROOT)
- **cu** or **hkcu** (HKEY_CURRENT_USER)
- **lm** or **hklm** (HKEY_LOCAL_MACHINE).

The case of *key* doesn't matter

subkey: The subkey you want to create.

Example

```
Setregkey,LM,Software\MyApp
```

Notes

Attempting to create a key that already exists does not cause an error.

Shortcut

Description

Creates a shortcut.

Syntax

Shortcut,*name,target*

Parameters

name:	The path and name of the shortcut file. The file name must end in .lnk for Windows to recognize it as a shortcut.
target:	The target of the shortcut. If the target has a space in it quote marks must be used (see Command Line Structure section and example below).

Example

```
shortcut,\Program Files\Widget.lnk,"""\My App\Widget.exe"""
```

Notes

No validation is performed on target to be sure it is executable.

Launch Error Messages

Launch displays a message if it encounters an error during the processing of a script. It is possible to get cascading error messages, as Launch does not stop processing the script if it encounters an error. An example of this would be a failure creating a directory causing the failure of all files copied to that directory.

Here is a list of the possible error messages that could be given:

Error Message	Given by	Description
Bad wait code wait-code	Launch LaunchCmd	The wait-code wasn't recognized
Directory Creation Failed error-code	MkDir	There was a problem encountered creating the directory
Directory Removal Failed error-code	RmDir	There was a problem encountered removing the directory
Error reading script file	-	An error occurred reading the script file.
File Copy Failed error-code	Copy Fcopy	There was a problem encountered copying the file
File Delete Failed error-code	Delete	There was a problem encountered deleting the file
Invalid Command: command	-	The command wasn't recognized
Invalid Data Length data	SetRegData	Tried to set more than 2000 byte values in a binary field
Invalid Data Type type	SetRegData	The value of the type parameter is invalid
Invalid decimal data data	SetRegData	The data field doesn't contain decimal data
Invalid hex data data	SetRegData	The data field doesn't contain hexadecimal data
Invalid Registry Key key	DelRegData DelRegKey SetRegData DelRegKey	The key parameter to the command has not been recognized
Parms: Invalid Create Directory	MkDir	Not enough parameters were supplied.
Parms: Invalid Create Registry Key	SetRegKey	Not enough parameters were supplied.
Parms: Invalid Create Shortcut	Shortcut	Not enough parameters were supplied.
Parms: Invalid Delete Registry Data	DelRegData	Not enough parameters were supplied.
Parms: Invalid Delete Registry Key	DelRegKey	Not enough parameters were supplied.
Parms: Invalid File Copy	Copy Fcopy	Not enough parameters were supplied.
Parms: Invalid File Delete	Delete	Not enough parameters were supplied.
Parms: Invalid Program Name	Launch LaunchCmd	Not enough parameters were supplied.

Error Message	Given by	Description
Parms: Invalid Remove Directory	RmDir	Not enough parameters were supplied.
Parms: Invalid Set Registry Data	SetRegData	Not enough parameters were supplied.
Parms: Invalid User Message	Message	Not enough parameters were supplied.
Program Launch couldn't get ExitCode error-code	Launch LaunchCmd	There was a problem getting the exit status of the program.
Program Launch Failed error-code	Launch LaunchCmd	There was a problem executing the program.
Registry Key Create Failed error-code	SetRegKey	There was a problem creating the registry key given.
Registry Key Delete Failed error-code	DelRegKey	There was a problem deleting the registry key given.
Registry Value Delete Failed error-code	DelRegData	There was a problem deleting the registry data. Most likely a bad subkey.
Registry Value Set Failed error-code	SetRegData	There was a problem setting the registry data. Most likely a bad subkey.
Shortcut Creation Failed error-code	Shortcut	There was a problem encountered creating the shortcut.
Unable to open file script-file	-	There was a problem opening the script-file. This message is only displayed when manually running Launch.

Example Script File

```
iffile,\System\applock.cab
launchcmd,\Windows\wceload.exe,"/noaskdest /noui \System\applock.cab",w
launch,\Windows\applockprep.exe,c
endiffile
launchcmd,\Windows\wceload.exe,"/noaskdest /noui \System\wedge.cab",w
iffile,\System\summit.cab
launchcmd,\Windows\wceload.exe,"/noaskdest /noui \System\summit.cab",w
endiffile
iffile,\System\RFTerm.cab
launchcmd,\Windows\wceload.exe,"/noaskdest /noui \System\RFTerm.cab",w
endiffile
iffile,\System\Java.cab
launchcmd,\Windows\wceload.exe,"/noaskdest /noui \System\Java.cab",w
launchcmd,\Windows\wceload.exe,"/noaskdest /noui \Windows\Jeode.cab",w
endiffile
launch,\System\regrest.exe,w
coldboot
```

Software Development

See Also: LXE CE API Programming Guide

The LXE *CE API Programming Guide* documents LXE-specific API calls for the MX7 Tecton. It is intended as an addition to the standard Microsoft Windows Mobile API documentation.

A Software Developers Kit (SDK) and additional information about software development can be found on the LXE Developer Portal. For more information and to access the portal, go to www.lxe.com/developer or contact your LXE representative.

Enabler Installation and Configuration

Introduction

This section discusses LXE supported features with Wavelink Avalanche Mobile Device Servers. This section is split into three basic areas:

- Installation
- User Interface
- Enabler Configuration

Installation

To use the Wavelink Avalanche MC System, the following items are required:

- A desktop or laptop PC on which to install the Avalanche MC Console.
- A desktop or laptop PC on which to install the Avalanche Mobile Device Server (this can be the same PC where the Avalanche MC Console is installed).
- Wavelink Avalanche MC Console 4.2 or later.
- A Wavelink Device License for each client device.

To use Avalanche Remote Control, the follow additional items are required:

- Wavelink Remote Control plug-in, 2.0 or later
- A Wavelink Remote Control License for each client device

Installing the Enabler on LXE Devices

LXE devices have the Avalanche Enabler installation files loaded, but not installed, on the mobile device when it is shipped from LXE. The installation files are located in the \System folder.

*Note: **Important:** If the user is NOT using Wavelink Avalanche to manage their mobile device(s), the Enabler should not be installed on the mobile device(s). Doing so results in unnecessary delays when booting the device.*

Briefly . . .

The Avalanche Enabler installation file LXE_ENABLER.CAB is loaded on the MX7 Tecton by LXE; however, the device is not configured to launch the Enabler installation file automatically. The installation application must be run manually the first time Avalanche is used.

After the installation application is manually run, the Enabler will, by default, be an auto-launch application.

This behavior can be modified by accessing the Avalanche Update Settings panel through the Enabler Interface.

The RMU.CE.CAB file is placed on the device during manufacturing in the \System\RMU folder.

During the Enabler installation process, the Enabler checks for the RMU.CE.CAB file in the \System folder.

- If present, it assumes the RMU.CE.CAB file is already installed and continues.
- If the file RMU.CE.CAB file is not present, it looks for the file in the \System\RMU folder.
- If present, the Enabler copies the file to the \System folder and installs it.

At this point, the OS will automatically install the RMU (Remote Management Utility) after the MX7 Tecton reboots.

Enabler Uninstall Process

To remove the LXE Avalanche Enabler from the MX7 Tecton:

- Delete the Avalanche folder located in the \System directory.
- Warm boot the MX7 Tecton.

The Avalanche folder cannot be deleted while the Enabler is running. See Stop the Enabler Service.

If sharing errors occur while attempting to delete the Avalanche folder, warm boot the MX7 Tecton, immediately delete the Avalanche folder, and then perform another warm boot.

Stop the Enabler Service

To stop the Enabler from monitoring for updates from the Mobility Center Console:

1. Open the Enabler Settings Panels by tapping the Enabler icon on the MX7 Tecton desktop.
2. Select **File | Settings**.
3. Select the **Preferences** tab.
4. Select **Do not monitor** to prevent automatic monitoring upon **Startup**.
5. Select **Exit Application** for an immediate shutdown of all Enabler update functionality upon exiting the user interface.
6. Click the **OK** button to save the changes.
7. **Reboot** the MX7 Tecton if necessary.

Update Monitoring Overview

There are three methods by which the Enabler on the MX7 Tecton can communicate with the Mobile Device Server running on the host machine.

- Wired via a serial cable between the Mobile Device Server PC and the MX7 Tecton.
- Wired via a USB connection, using ActiveSync, between the Mobile Device Server PC and the MX7 Tecton.
- Wirelessly via the MX7 Tecton 2.4GHz radio and an access point

After installing the Enabler on the MX7 Tecton the Enabler searches for a Mobile Device Server, first by polling all available serial ports and then over the wireless network.

The Enabler running on the MX7 Tecton will attempt to access COM1, COM2, and COM3. “Agent not found” will be reported if the Mobile Device Server is not located or a serial port is not present or available (COM port settings can be verified using the LXE barcode wedge panels on the MX7 Tecton).

The wireless connection is made using the default wireless [radio] interface on the mobile device therefore the MX7 Tecton must be actively communicating with the network for this method to succeed.

If a Mobile Device Server is found, the Enabler automatically attempts to apply all wireless and network settings from the active profile. The Enabler also automatically downloads and processes all available packages.

If the Enabler does not automatically detect the Mobile Device Server, the IP address of the Mobile Device Server can be entered on the Connect tab of the Enabler setup. Please see Enabler Configuration for details.

Mobile Device Wireless and Network Settings

Once the connection to the Mobile Device Server is established, the MX7 Tecton Enabler attempts to apply all network and wireless settings contained in the active profile.

The success of the application of settings is dependent upon the local configuration of control parameters for the Enabler.

These local parameters cannot be overridden from the Avalanche MC Console.

The default Enabler adapter control settings are:

- Manage network settings – enabled
- Use Avalanche network profile – enabled
- Manage wireless settings – disabled for Windows CE devices

To configure the Avalanche Enabler management of the network and wireless settings:

1. Open the Enabler Settings Panels by tapping the **Enabler icon** on the desktop.
2. Select **File | Settings**.
3. Select the **Adapters** tab.
4. Choose settings for the **Use Manual Settings** parameter.
5. Choose settings for **Manage Network Settings**, **Manage Wireless Settings** and **Use Avalanche Network Profile**.
6. Click the **OK button** to save the changes.
7. **Reboot** the device.

Preparing an LXE Device for Remote Management

Two additional utilities are necessary for remote management.

- The **LXE Remote Management Utility (RMU)** must be installed on all LXE mobile devices first – then you can control mobile device reboot, storage RAM adjustment, real-time updates and Avalanche Enabler properties.
  If in doubt, verify RMU.CE.CAB exists in the \System folder. If the RMU.CE.CAB file is present when the Enabler is installed, the RMU is also installed.

  Important: If the OS package includes double-byte Asian fonts, the storage RAM property of the RMU must be higher than the default value (40MB).

  If the amount of storage RAM is too low, the Enabler returns a "Mobile unit out of resources" error.

  To determine the minimum value required, inspect the RMU.StorageRAM>=*nn* parameter in the Criteria field for the OS package. Generally, this setting should be approximately 40 MB above the amount of RAM in use on the device for a standard OS and 50MB above the amount of RAM in use for an OS with Asian fonts.

  For example, if after installing all the software, the device shows 5MB in use, this setting should be about 45MB for a standard OS, 55 MB for an Asian font OS.
- Use the LXE **Wireless Configuration Application (WCA)** when you want to remotely manage the Summit client device. This utility is downloaded and installed in addition to the LXE Remote Management Utility. The WCA is included when the Summit radio driver software is updated. The WCA is automatically installed when the radio driver is updated.

User Interface

The Enabler can be configured and controlled manually through the user interface on the MX7 Tecton. This section details the functionality that can be controlled by the user or system administrator.

Parameters and Screen Displays

Screen displays shown in this section are designed to present the end-user with information graphically.

Placement of information on the screen displays may be split between one or many tabbed panels.

Standard Avalanche Enabler parameters that are not supported by LXE may be missing or dimmed (visible but unable to be edited) on the tabbed panels or screen displays.

Enabler Configuration

Enabler Settings Icon

The Enabler user interface application is launched by clicking either the **Enabler Settings icon** on the desktop or Taskbar or by selecting **Avalanche Enabler** from the Programs menu.

The opening screen presents the MX7 Tecton user with the connection status and a navigation menu.

Avalanche Enabler Opening Screen

Note: Some parameters and features described in this section may not be available if you are not running the latest version of the Enabler. Contact your LXE representative for upgrades.

File Menu Options

Connect	The Connect option under the File menu allows the user to initiate a manual connection to the Mobile Device Server. The connection methods, by default, are wireless and COM connections. Any updates available will be applied to the MX7 Tecton immediately upon a successful connection.
Scan Config	*Note: LXE does not support the Scan Configuration feature.* The Scan Config option under the File menu allows the user to configure Enabler settings using a special barcode that can be created using the Avalanche MC Console utilities. Refer to the Wavelink Avalanche Mobility Center User Guide for details.
Settings	The Settings option under the File menu allows the MX7 Tecton user to access the control panel to locally configure the Enabler settings. The Enabler control panel is, by default, password protected. The default Settings password is **system** The password is not case-sensitive.

Avalanche Update using File | Settings

Use these menu options to setup the Avalanche Enabler on the MX7 Tecton. LXE recommends changing settings and then saving the changes (reboot) before connecting to the network.

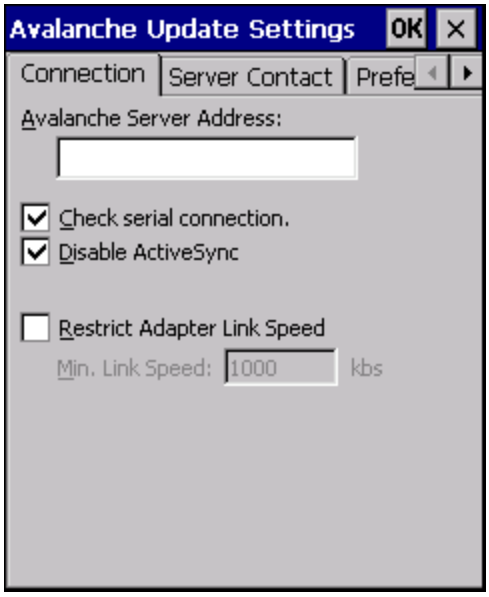
Alternatively, the Mobile Device Server can be disabled until needed (refer to the **Wavelink Avalanche Mobility Center User's Guide** for details).

Menu Options

Note: Your MX7 Tecton screen display may not be exactly as shown in the following menu options. Contact your LXE representative for version information and upgrade availability.

Connection	Enter the IP Address or host name of the Mobile Device Server. Set the order in which serial ports or RF connections are used to check for the presence of the Mobile Device Server.
Execution	*Not available in this release*. LXE recommends using AppLock, which is resident on each Windows CE device.
Server Contact	Setup synchronization, scheduled Mobile Device Server contact, suspend and reboot settings.
Preferences	Set options for Enabler startup or shutdown and logging.
Taskbar	Set options for Taskbar.
Scan Config	This option allows the user to configure Enabler settings using a special barcode that is created by the Avalanche MC Console. *Scan Config not currently supported by LXE.*
Display	Set up the Windows display at startup, on connect and during normal mode. The settings can be adjusted by the user.
Shortcuts	Add, delete and update shortcuts to user-allowable applications.
Adapters	Enable or disable network and wireless settings. Select an adapter and switch between the Avalanche Network Profile and manual settings.
Status	View the current adapter signal strength and quality, IP address, MAC address, SSID, BSSID and Link speed. The user cannot edit this information.

Connection

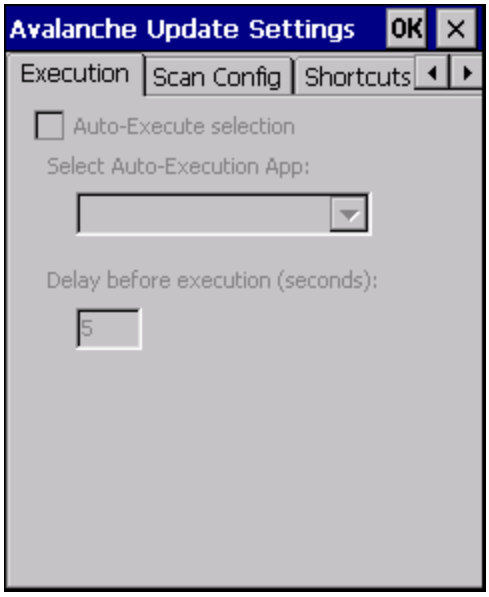


Connection Options

Avalanche Server Address	Enter the IP Address or host name of the Mobile Device Server assigned to the MX7 Tecton.
Check Serial Connection	Indicates whether the Enabler should first check for serial port connection to the Mobile Device Server before checking for a wireless connection to the Mobile Device Server.
Disable ActiveSync	Disable ActiveSync connection with the Mobile Device Server.
Restrict Adapter Link Speed	Default is disabled. Minimum Link Speed dimmed.

Execution

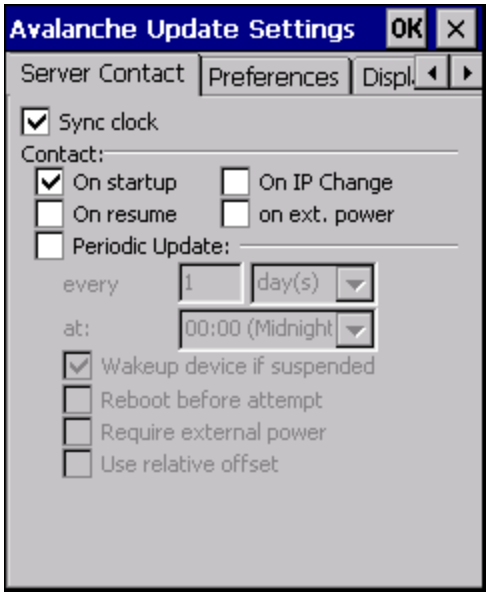
Note the dimmed options on this MX7 Tecton panel. This menu option is designed to manage downloaded applications for automatic execution upon startup.



Execution Options (Dimmed)

Auto-Execute Selection	An application that has been installed with the Avalanche Management system can be run automatically following each boot.
Select Auto-Execute App	The drop-down box provides a list of applications that have been installed with the Avalanche Management System.
Delay before execution	Time delay before launching Auto-Execute application.

Server Contact



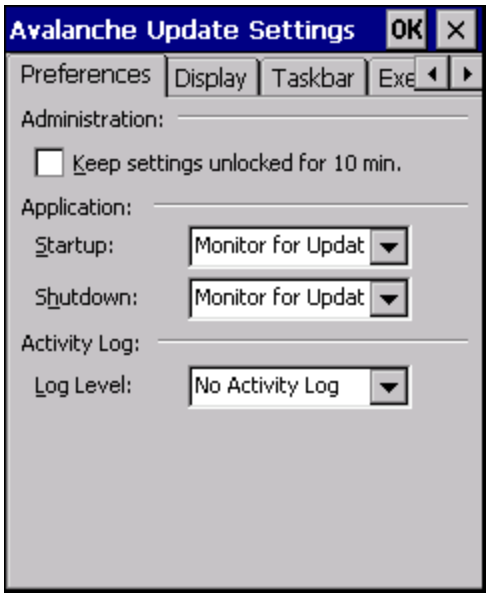
Server Contact Options

Note: Your MX7 Tecton screen display may not be exactly as shown above. Contact your LXE representative for upgrade availability and version information.

Sync Clock	Reset the time on the MX7 Tecton based on the time on the Mobile Device Server host PC.
Contact	On Startup – Connect to the Mobile Device Server when the Enabler is accessed.
	On Resume – Connect to the Mobile Device Server when resuming from Suspend mode.
	On Ext. Power – Initiate connection to the Mobile Device Server when the device is connected to an external power source, such as based on a docking event.
Periodic Update	Allows the administrator to configure the Enabler to contact the Mobile Device Server and query for updates at a regular interval beginning at a specific time.
Wakeup device if suspended	If the time interval for periodic contact with the Mobile Device Server occurs, a mobile device that is in Suspend Mode can wakeup and process updates.
Reboot before attempt	Reboot mobile device before attempting to contact Mobile Device Server.
Require external power	Only connect when the mobile device has external power.
Use relative offset	Dimmed.

Preferences

LXE recommends using LXE AppLock to manage the taskbar. AppLock is resident on each mobile device with a Windows CE OS.



Preferences Options

Administration

By default, *Keep settings unlocked for 10 minutes* is disabled (checkbox is blank).

Application

Default value - Monitor for Updates

The following options are available for startup and shutdown monitoring:

- Do not Monitor - When the device boots, do not launch the Enabler application and do not attempt to connect to the Mobile Device Server. (Startup only).
- Monitor for Updates - Attempt to connect to the Mobile Device Server and process any updates that are available. Do not launch the Enabler application.
- Launch User Interface - Attempt to connect to the Mobile Device Server and process any updates that are available. Launch the Enabler application. (Startup only).
- Exit Application - The system administrator can control whether the Enabler continues to monitor the Mobile Device Server for updates once the Enabler application is exited. (Shutdown only).

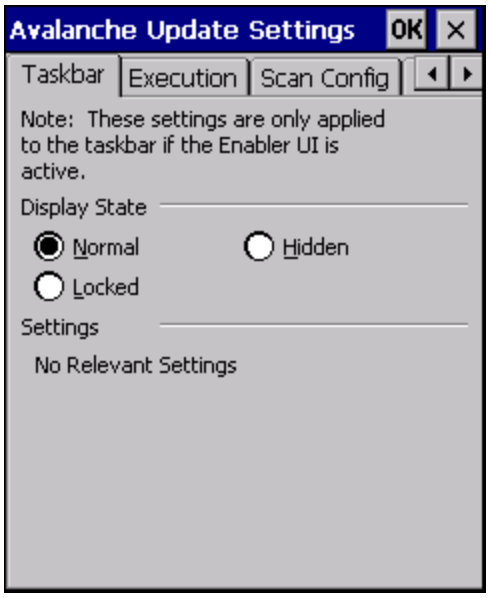
Activity Log

Default value - No Activity Log

Use this option to control the level of log kept while Enabler is running.

Taskbar

LXE recommends using LXE AppLock to manage the taskbar. AppLock is resident on each mobile device with a Windows CE OS (with the exception of the HX3). AppLock configuration instructions are located in the MX7 Tecton reference guide.



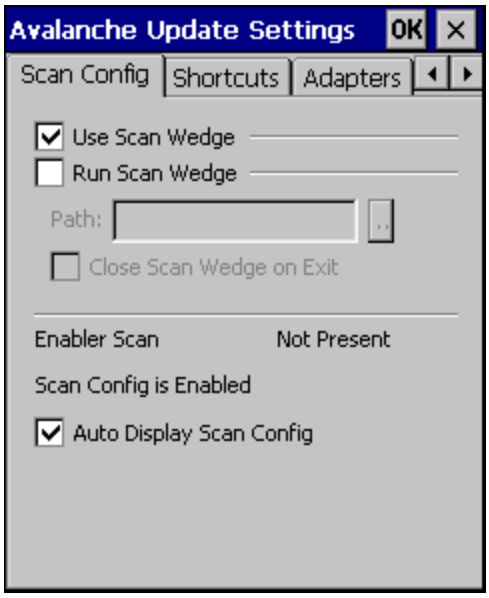
Taskbar Options

The Display State options control the appearance of the taskbar while using the Enabler interface.

- Normal - taskbar is visible, taskbar icons function normally.
- Hidden - taskbar is not displayed
- Locked - taskbar is visible, but most icons are hidden or for information only.

Scan Config

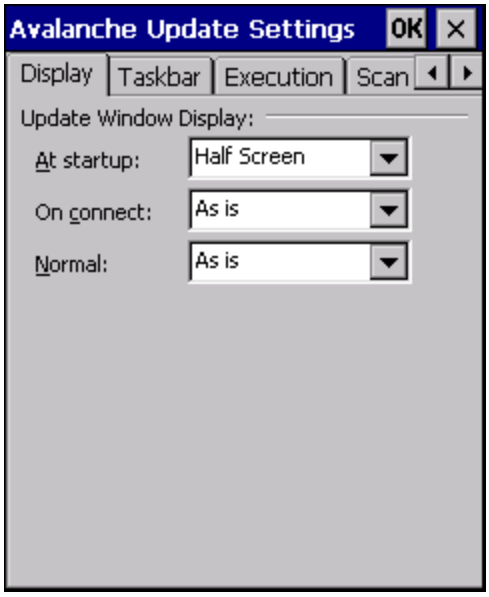
LXE recommends using *LXE eXpress Config* and *eXpress Scan* for this function. eXpress Scan is included with the updated MX7 Tecton enablers.



Scan Config Option

Scan Config functionality is a standard option of the Wavelink Avalanche MC system but is *not currently supported by LXE* on the MX7 Tecton.

Display



Window Display Options

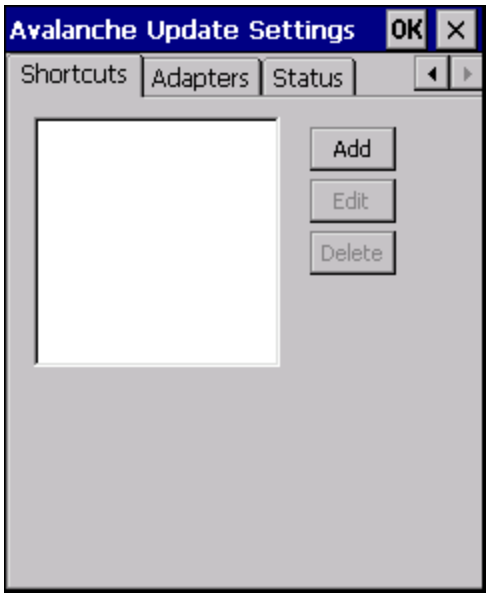
Update Window Display

The user interface for the Enabler can be configured to dynamically change based on the status of the MX7 Tecton connection with the Mobile Device Server.

At startup	Default is Half Screen. Options are Half screen, Hidden or Full screen.
On connect	Default is As Is. Options are As is, Half screen, or Full screen.
Normal	Default is As Is. Options are Half screen, Hidden or As Is.

Shortcuts

LXE recommends using *LXE AppLock* for this function. AppLock is resident on each mobile device with a Windows CE OS.



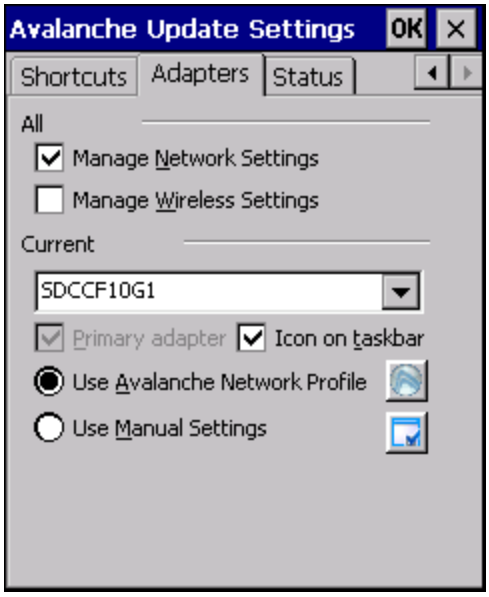
Application Shortcuts

Configure shortcuts to other applications on the MX7 Tecton. Shortcuts are viewed and activated in the Programs panel. This limits the user's access to certain applications when the Enabler is controlling the mobile device display.

LXE recommends using *LXE AppLock* for this function.

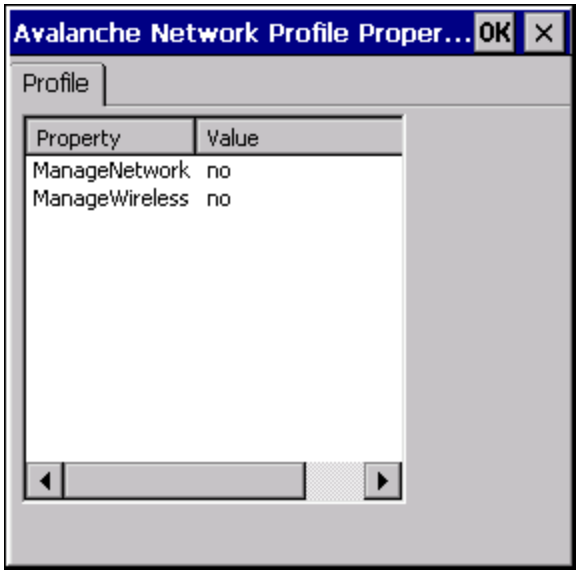
Adapters

Note: LXE recommends the user review the network settings configuration utilities and the default values before setting All Adapters to Enable in the Adapters applet.



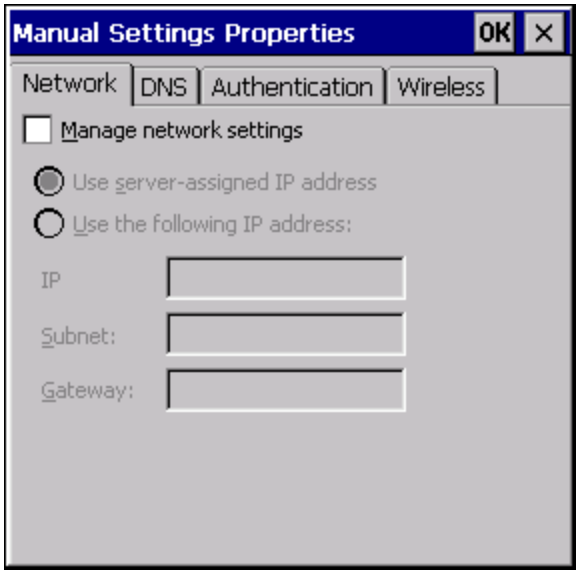
Adapters Options - Network

Manage Network Settings	When enabled, the Enabler will control the network settings. This parameter cannot be configured from the Avalanche Mobility Center Console and is enabled by default.
Manage Wireless Settings	When enabled, the Enabler will control the wireless settings. This parameter cannot be configured from the Avalanche Mobility Center Console and is disabled by default. For Summit clients, Manage Wireless Settings should not be checked as LXE's configuration packages provide more radio configuration options.
Current Adapter	Lists all network adapters currently installed on the MX7 Tecton.
Primary Adapter	Indicates if the Enabler is to attempt to configure the primary adapter (active only if there are multiple network adapters).
Icon on taskbar	Places the Avalanche icon in the Avalanche taskbar that may, optionally, override the standard Windows taskbar.
Use Avalanche Network Profile	The Enabler will apply all network settings sent to it by the Mobile Device Server.

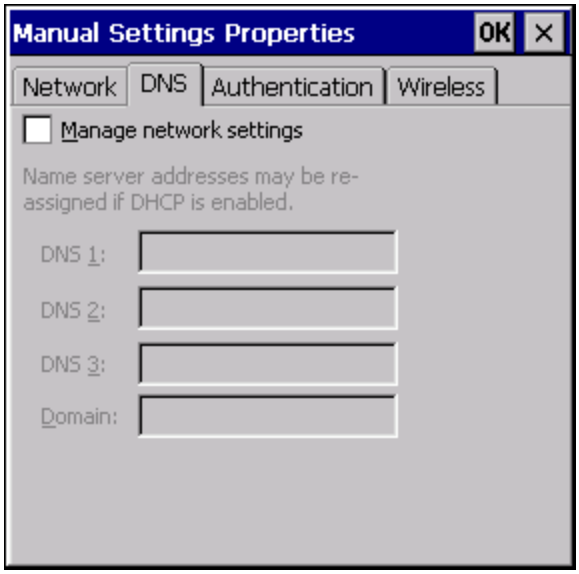
Avalanche Icon	Selecting the Avalanche Icon will access the Avalanche Network Profile tab which will display current network settings.  **Avalanche Network Profile Displayed**
Use Manual Settings	When enabled, the Enabler will ignore any network or wireless settings coming from the Avalanche MC Console and use only the network settings on the MX7 Tecton.
Properties Icon	Selecting the Properties icon displays the Manual Settings Properties dialog applet. From here, the user can configure Network, DNS and Wireless parameters using the displays shown below:

Note: A reboot may be required after enabling or disabling these options.

Network

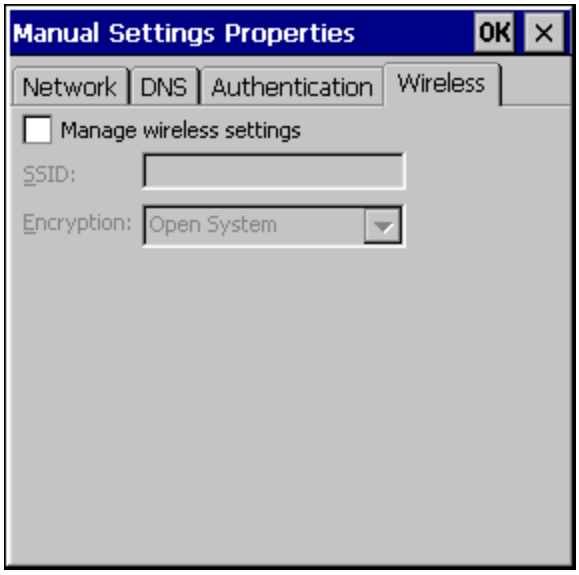


DNS



Authentication

Wireless



Note: The Authentication tab may not be present in all versions of the Enabler.

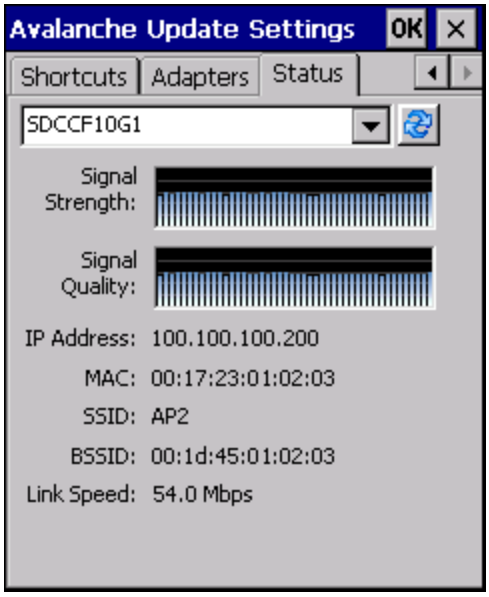
LXE does not recommend enabling "Manage Wireless Settings" for Summit Client devices.

Troubleshooting: When you download a profile that is configured to manage network and wireless settings, the Enabler will not apply the manage network and wireless settings to the adapter unless the global Manage wireless settings and Manage network settings options are enabled on the Adapters panel (see Figure titled Adapters Options – Network, earlier in this section). Until these options are enabled, the network and wireless settings are controlled by the third-party software associated with these settings.

Status

The Status panel displays the current status of the MX7 Tecton network adapter selected in the drop down box. Note the availability of the Windows standard Refresh button.

When the Windows Refresh button is tapped, the signal strength, signal quality and link speed are refreshed for the currently selected adapter. It also searches for new adapters and may cause a slight delay to refresh the contents of the drop-down menu.



Status Display

Link speed indicates the speed at which the signal is being sent from the adapter to the MX7 Tecton. Speed is dependent on signal strength.

Exit

The Exit option is password protected. The default password is **leave**. The password is not case-sensitive.

Exit Password

If changes were made on the MX7 Tecton Startup/Shutdown tab screen, then after entering the password, tap OK and the following screen is displayed:

Continue or Stop Monitoring

Change the option if desired. Tap the X button to cancel Exit. Tap the OK button to exit the Avalanche applet.

Using Remote Management

1. Configure the radio to connect to the network running the Mobile Device Server. After the MX7 Tecton is connected, proceed to step 2.
2. If it is desired to configure the radio using the Summit package, add the configured package to the Wavelink Avalanche MC Console and enable it.
3. Verify RMU.CE.CAB exists in the \System\RMU folder.
4. Double click the MX7 Tecton enabler CAB file in the \System folder.
5. The enabler automatically launches after installation and contacts the Mobile Device Server. The Avalanche MC Console connected to that Mobile Device Server identifies the remote device and performs a sync. This downloads any available packages available for the MX7 Tecton.

Using eXpress Scan

eXpress Scan Desktop Icon

If the MX7 Tecton has an eXpress Scan icon on the desktop, eXpress Scan may be used for the initial configuration of the device.

If the eXpress Scan icon is not present on the desktop, install the Enabler. If the icon is still not present, the Enabler must be updated.

If the eXpress Scan icon is present, follow these steps to configure the MX7 Tecton to connect with the wireless network and the Mobile Device Server.

Step 1: Create Barcodes

Barcodes are created with the eXpress Config utility on the desktop/laptop computer, not the mobile device. Depending on the barcode length and the number of parameters selected, eXpress Config generates one or more barcodes for device configuration. The barcodes contain configuration parameters for the wireless client in the LXE device and may also specify the address of the Mobile Device Server.

Barcodes should be printed at a minimum of 600 dpi.

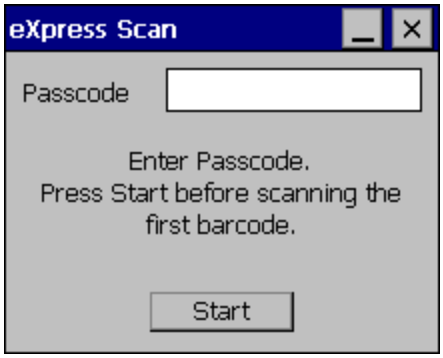
Please see "Creating Configuration Barcodes with eXpress Config" .

Step 2: Scan Barcodes

For each LXE device to be configured, please follow these instructions.

Start eXpress Scan on the MX7 Tecton by double clicking the eXpress Scan icon.

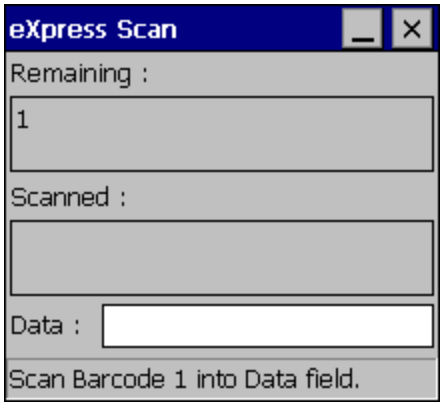
Enter the barcode password, if any.



eXpress Scan Password Input

Click Start.

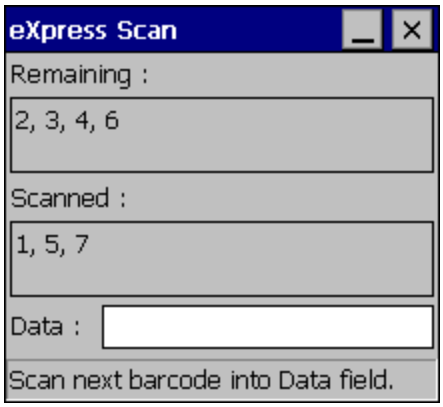
Barcode 1 must be scanned first. The scanned data is displayed in the “Data” text box. The password, if any, entered above is compared to the password entered when the barcodes were created.



Scan Barcode 1

If the passwords match, the barcode data is processed and the screen is updated to reflect the number of barcodes included in the set.

If the passwords do not match, an error message is displayed. The current screen can be closed using the X box in the upper right corner. The password can be re-entered and Barcode 1 scanned again.



Scan Remaining Barcodes

The remaining barcodes may be scanned in any order. After a barcode is scanned, that barcode is removed from the "Remaining:" list and placed in the "Scanned:" list.

Step 3: Process Completion

After the last barcode is scanned, the settings are automatically applied.

Configuring Settings

Once configured, the MX7 Tecton is warmbooted. Once connected to the wireless network and the Mobile Device Server, any software updates and additional configuration data are downloaded.

Update the MX7 Tecton

Contact your LXE representative for the process to follow when your MX7 Tecton needs to be re-imaged.

The MX7 Tecton running Windows Mobile must be returned to the manufacturer, LXE, if the device is to be re-imaged with any other Windows operating system (for example, Windows CE 6).

Battery State and OS Upgrade

LXE recommends a fully charged main battery be installed in the MX7 Tecton prior to upgrading the operating system. A prompt may appear when the battery reaches Critical Low that informs the user there is not enough power in the main battery to perform the update.

The operating system will not be able to execute the OS update when the battery level is too low (25% or less), as there is a high risk that the power remaining in the battery expires when executing the update and the MX7 Tecton will be left in an inoperable state.

When main battery power level is too low, connect external power to the MX7 Tecton before performing the OS update procedure. Do not disconnect external power before the update process is complete.

Contact your LXE representative for the process to follow when your MX7 Tecton needs the OS updated.

The MX7 Tecton running Windows Mobile must be returned to LXE if the device is to be imaged with any other Windows operating system (for example, Windows CE).

Wireless Network Configuration for LXE Devices

The Summit client device is a Summit 802.11a/b/g radio, capable of 802.11a, 802.11b and 802.11g data rates. The radio can be configured for no encryption, WEP encryption or WPA security.

Security Options Supported are

- None
- WEP
- LEAP
- WPA-PSK
- WPA/LEAP
- PEAP-MSCHAP
- PEAP-GTC
- EAP-TLS
- EAP-FAST

Important Notes

	It is important that all dates are correct on the MX7 Tecton and host computers when using any type of certificate. Certificates are date sensitive and if the date is not correct authentication will fail. Verify and adjust the date using the Clock & Alarms panel.
	It may be necessary to upgrade radio software in order to use certain Summit Client Utility (SCU) features. Contact your LXE representative for details.
	When using the 802.11a radio, the U-NII 1 band is the preferred band for indoor operation. For regulatory domains in which the U-NII 3 band is allowed, the following channels are supported: 149, 153, 157 and 161. The AP must be configured accordingly.

After making any changes to the wireless configuration, perform a Suspend/Resume on the MX7 Tecton.

Summit Client Utility

Note: When making changes to profile or global parameters, tap the power key to place the MX7 Tecton in Suspend. When the MX7 Tecton resumes from suspend the parameters are applied. The MX7 Tecton can be resumed by tapping the power key or the touchscreen or by pressing any key.

Start | Settings | System | Wi-Fi or

Summit Tray Icon (if present)

The Main Tab provides information, admin login and active profile selection.

Profile specific parameters are found on the Profile Tab. The parameters on this tab can be set to unique values for each profile.

The Status Tab contains information on the current connection.

The Diags Tab provides utilities to troubleshoot the radio.

Global parameters are found on the Global Tab. The values for these parameters apply to all profiles.

Help

Help is available by clicking the ? icon in the title bar on most SCU screens.

The SCU help may also be accessed by selecting Start | Help and tapping the Summit Client Utility link. The SCU does not have to be accessed to view the help information using this option.

Summit Tray Icon

The Summit tray icon provides access to the SCU and is a visual indicator of radio status.

The Summit tray icon is displayed when:

- The Summit radio is installed and active
- The Windows Zero Config utility is not active
- The Tray Icon setting is On

Click the icon to launch the SCU. Use the tray icon to view the radio status:

	The radio is not currently associated or authenticated to an Access Point
	The signal strength for the currently associated/authenticated Access Point is less than -90 dBm
	The signal strength for the currently associated/authenticated Access Point is -71 dBm to -90 dBm
	The signal strength for the currently associated/authenticated Access Point is -51 dBm to -70 dBm
	The signal strength for the currently associated/authenticated Access Point is greater than -50 dBm

Using Windows Mobile Wireless Manager

LXE recommends using the Summit Client Utility to manage wireless connectivity.

However, if desired, Windows Mobile includes the Wireless Manager utility to manage wireless network connections in place of the Summit Client Utility.

To use the Windows Mobile Wireless Manager, first open the Summit Client Utility.

1. Select **ThirdPartyConfig** in the Active Profile drop down box on the Main tab.
2. A message appears that a Power Cycle is required to make settings activate properly.
3. Tap **OK**.
4. Suspend/Resume the MX7 Tecton.

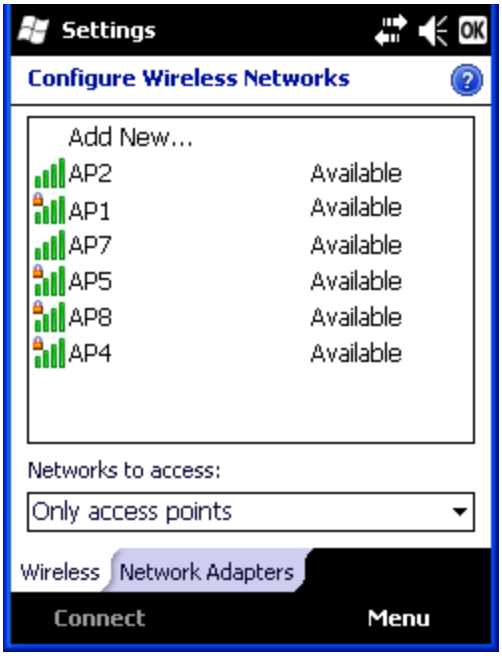
Access the Wireless Manager utility by tapping the radio icon at the top of the screen or tapping:

Start | Settings | Connections | Wi-Fi

If the Wi-Fi icon is not present in the Connections panel, return to the Summit Client Utility and select **ThirdPartyConfig**.

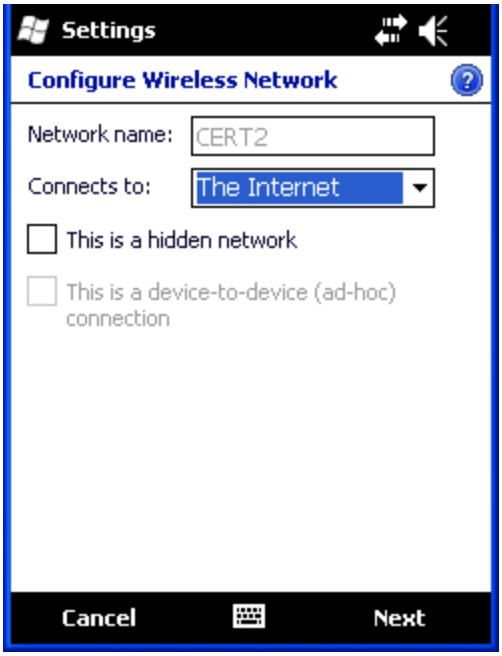
Create a New Network Connection

Click on the Wi-Fi icon. A list of available networks is displayed.



Available networks

If the desired network is not displayed, tap **Add New**. If the desired network is displayed in the list, tap the network name.



Network Configuration

Enter the SSID of the desired network in the **Network name** text box. Be sure to check the *This is a hidden network* checkbox for a non-broadcast SSID.

In the **Connects to** box, select **The Internet** if the MX7 Tecton connects directly to the Internet, select Work if the MX7 Tecton connects to a network (even if the network provides an Internet connection).

Tap Next.

Network Authentication

Please refer to the Windows Mobile help screens or online documentation for configuring wireless security using the Windows Mobile Wireless Manager.

Note: Tap Start | Help for context sensitive Windows Help when changing or viewing options. Tap the X icon in the top right corner to close Windows Help.

Edit a Network Connection

Double tap the network name to edit the configuration or tap the network name and tap **Connect** to connect to the network.

Network configuration screens are the same as displayed in the previous section.

Switch Control to SCU

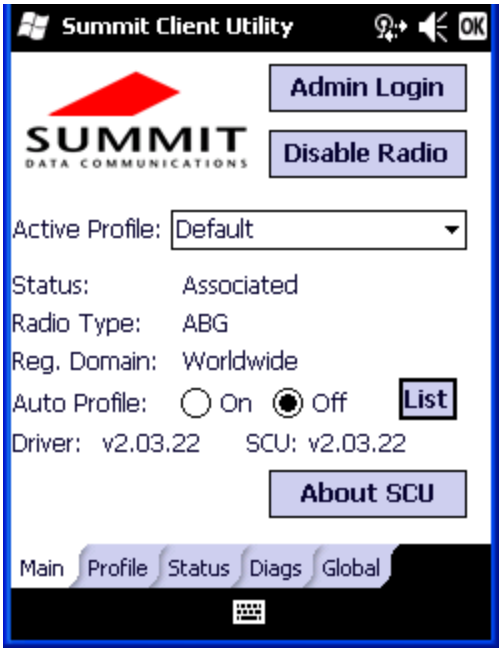
1. To switch back to SCU control, select any other profile except **ThirdPartyConfig** in the SCU Active Config drop down list on the Main tab.
2. A message appears that a Power Cycle is required to make settings activate properly.
3. Tap **OK**.
4. Suspend/Resume the MX7 Tecton.

Radio control is passed to the Summit Client Utility.

Main Tab

Start | Settings | System | Wi-Fi | Main tab

Factory Default Settings	
Admin Login	SUMMIT
Radio	Enabled
Active Config/Profile	Default
Regulatory Domain	FCC or ETSI



SCU - Main Tab

The Main tab displays information about the wireless client device including:

- SCU (Summit Client Utility) version
- Driver version
- Radio Type (ABG is an 802.11 a/b/g radio).
- Regulatory Domain
- Copyright Information can be accessed by tapping the About SCU button
- Active Config profile / Active Profile name
- Status of the client (Down, Associated, Authenticated, etc).

The **Active Profile** can be switched without logging in to Admin mode. Selecting a different profile from the drop down list does not require logging in to Administrator mode. The profile must already exist. LXE recommends performing a Suspend/Resume function when changing profiles. Profiles can be created or edited after the Admin login password has been entered and accepted.

When the profile named “ThirdPartyConfig” is chosen as the active profile, the Summit Client Utility passes control to Wireless Manager for configuration of all client and security settings for the network module.

The **Disable Radio** button can be used to disable the network card. Once disabled, the button label changes to Enable Radio. By default the radio is enabled.

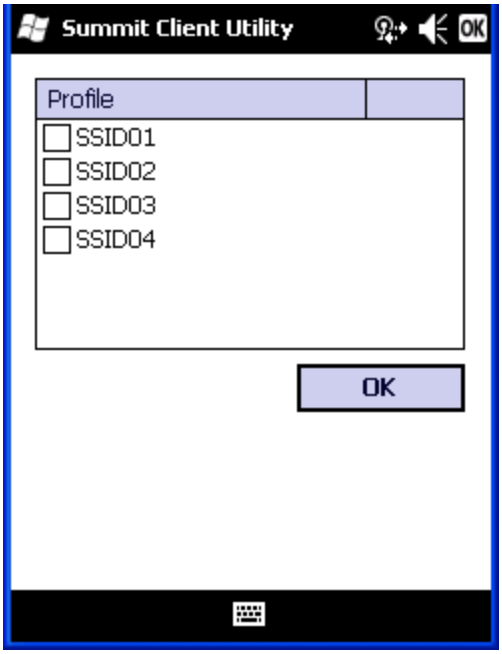
The **Admin Login** button provides access to editing wireless parameters. Profile and Global may only be edited after entering the Admin Login password.

The password is case-sensitive.

Once logged in, the button label changes to Admin Logout. To logout, either tap the **Admin Logout** button or exit the SCU without tapping the **Admin Logout** button.

Auto Profile

Auto Profile allows the user to configure a list of profiles that the SCU can search when a radio connection is lost. After using the Profile tab to create any desired profiles, return to the Main tab. To specify which profiles are to be included in Auto Profile, click the **List** button.



Select Profiles for Auto Profile

The Auto Profile selection screen displays all currently configured profiles. Click on the checkbox for any profiles that are to be included in Auto Profile selection then click ok to save.

To enable Auto Profile, click the **On** button on the **Main** tab.

When Auto Profile is On, if the radio goes out of range from the currently selected profile, the radio then begins to attempt to connect to the profiles listed under Auto Profile.

The search continues until:

- the SCU connects to and, if necessary, authenticates with, one of the specified profiles or
- the Off button is clicked to turn off Auto Profile.

Note: Do not include any profiles with an Ad Hoc Radio Mode in this listing.

Admin Login

To login to Administrator mode, tap the **Admin Login** button.

Once logged in, the button label changes to Admin Logout. The admin is automatically logged out when the SCU is exited. The Admin can either tap the **Admin Logout** button, or the **OK** button to logout.

Main Tab – Enter Admin Password

Enter the Admin password (the default password is SUMMIT and is case sensitive) and tap **OK**. If the password is incorrect, an error message is displayed.

The Administrator default password can be changed on the Global tab.

The end-user can:

- Turn the radio on or off on the Main tab.
- Select an active Profile on the Main tab.
- View the current parameter settings for the profiles on the Profile tab.
- View the global parameter settings on the Global tab.
- View the current connection details on the Status tab.
- View radio status, software versions and regulatory domain on the Main tab.
- Access additional troubleshooting features on the Diags tab.

After Admin Login, the end-user can also:

- Create, edit, rename and delete profiles on the Profile tab.
- Edit global parameters on the Global tab.
- Enable/disable the Summit tray icon in the taskbar.

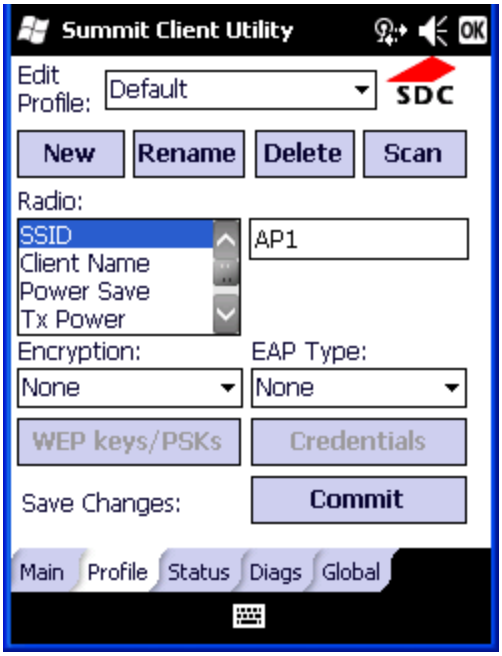
Profile Tab

Start | Settings | System | Wi-Fi | Profile tab

Note: Tap the Commit button to save changes before leaving this panel or the SCU. If the panel is exited before tapping the Commit button, changes are not saved!

Factory Default Settings

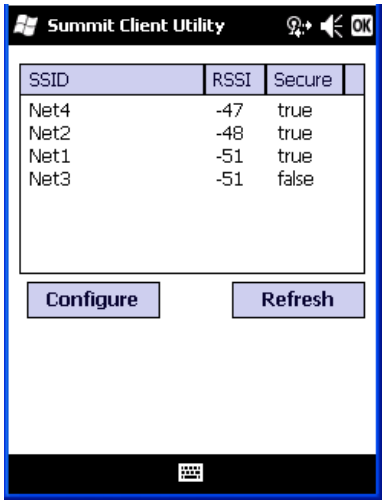
Profile	Default
SSID	Blank
Client Name	Blank
Power Save	Fast
Tx Power	Maximum
Bit Rate	Auto
Radio Mode	See Profile Parameters for default
Auth Type	Open
EAP Type	None
Encryption	None



SCU – ProfileTab

When logged in as an Admin (see Admin Login), use the Profile tab to manage profiles. When not logged in as an Admin, the parameters can be viewed, and cannot be changed. The buttons on this tab are dimmed if the user is not logged in as Admin. The Profile tab was previously labeled Config.

Buttons

Button	Function
Commit	Saves the profile settings made on this screen. Settings are saved in the profile.
Credentials	Allows entry of a username and password, certificate names, and other information required to authenticate with the access point. The information required depends on the EAP type.
Delete	Deletes the profile. The current active profile cannot be deleted and an error message is displayed if a delete is attempted.
New	Creates a new profile with the default settings (see Profile Parameters) and prompts for a unique name. If the name is not unique, an error message is displayed and the new profile is not created.
Rename	Assigns a new, unique name. If the new name is not unique, an error message is displayed and the profile is not renamed.
Scan	Opens a window that lists access points that are broadcasting their SSIDs. Tap the Refresh button to view an updated list of APs. Each AP's SSID, its received signal strength indication (RSSI) and whether or not data encryption is in use (true or false). Sort the list by tapping on the column headers. If the scan finds more than one AP with the same SSID, the list displays the AP with the strongest RSSI and the least security.  **SCU – Scan** If you are logged in as an Admin, tap an SSID in the list and tap the Configure button, you return to the Profile window to recreate a profile for that SSID, with the profile name being the same as the SSID (or the SSID with a suffix such as "_1" if a profile with the SSID as its name exists already).
WEP Keys / PSK Keys	Allows entry of WEP keys or pass phrase as required by the type of encryption.

Note: Unsaved Changes – The SCU will display a reminder if the Commit button is not clicked before an attempt is made to close or browse away from this tab.

Important – The settings for Auth Type, EAP Type and Encryption depend on the security type chosen.

Profile Parameters

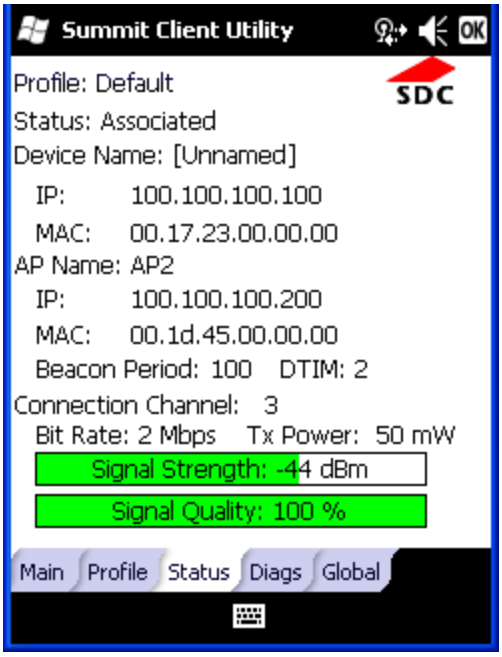
Parameter	Default	Explanation
Edit Profile	Default	A string of 1 to 32 alphanumeric characters, establishes the name of the Profile. Options are Default or ThirdPartyConfig.
SSID	Blank	A string of up to 32 alphanumeric characters. Establishes the Service Set Identifier (SSID) of the WLAN to which the client connects.
Client Name	Blank	A string of up to 16 characters. The client name is assigned to the network card and the device using the network card. The client name may be passed to networking wireless devices, e.g. Access Points.
Power Save	Fast	Power save mode is On. Options are: Constantly Awake Mode (CAM) power save off, Maximum (power saving mode) and Fast (power saving mode). When using power management, LXE recommends using FAST for best throughput results.
Tx Power	Maximum	Maximum setting regulates Tx power to the Max power setting for the current regulatory domain. Options are: Maximum, 50mW, 30mW, 20mW, 10mW, 5mW, or 1mW.
Bit Rate	Auto	Setting the rate to Auto will allow the Access Point to automatically negotiate the bit rate with the client device. This parameter cannot be changed.
Auth Type	Open	802.11 authentication type used when associating with the Access Point. Options are: Open, LEAP, or Shared key.
EAP Type	None	Extensible Authentication Protocol (EAP) type used for 802.1x authentication to the Access Point. Options are: None, LEAP, EAP-FAST, PEAP-MSCHAP, PEAP-GTC, PEAP-TLS, EAP-TTLS, or EAP-TLS. *Note: EAP Type chosen determines whether the Credentials button is active and also determines the available entries in the Credentials pop-up window.*
Encryption	None	Type of encryption to be used to protect transmitted data. Available options may vary by SCU version. Options are: None, WEP (or Manual WEP), WEP EAP (or Auto WEP), WPA PSK, WPA TKIP, WPA CCKM, WPA2 PSK, WPA2 AES, or WPA2 CCKM. CKIP is not supported in the MX7 Tecton. *Note: The Encryption type chosen determines if the WEP Keys / PSK Keys button is active and also determines the available entries in the WEP or PSK pop-up window.*

Parameter	Default	Explanation
Radio Mode	BGA Rates Full	Specify 802.11a, 802.11b and/or 802.11g rates when communicating with the AP. The options displayed for this parameter depend on the type of radio installed in the mobile device. Options: B rates only (1, 2, 5.5 and 11 Mbps) BG Rates Full (All B and G rates) G rates only (6, 9, 12, 18, 24, 36, 48 and 54 Mbps) BG optimized or BG subset (1, 2, 5.5, 6, 11, 24, 36 and 54 Mbps) A rates only (6, 9, 12, 18, 24, 36, 48 and 54 Mbps) ABG Rates Full (All A rates and all B and G rates with A rates preferred) BGA Rates Full (All B and G rates and all A rates with B and G rates preferred) Ad Hoc (when connecting to another client device instead of an AP) Default: BGA Rates Full (for 802.11a/b/g radio)

It is important the **Radio Mode** parameter correspond to the AP to which the device is to connect. For example, if this parameter is set to G rates only, the MX7 Tecton may only connect to APs set for G rates and not those set for B and G rates.

Status Tab

Start | Settings | System | Wi-Fi | Status tab



SCU – Status Tab

This screen provides information on the radio:

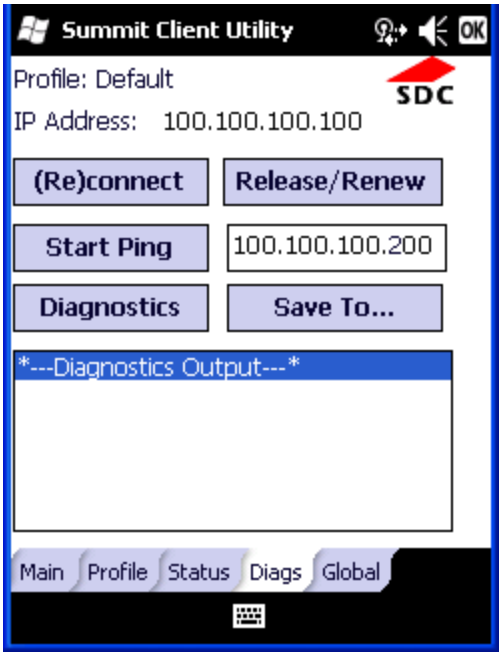
- The profile being used
- The status of the radio card (down, associated, authenticated, etc.)
- Client information including device name, IP address and MAC address.
- Information about the Access Point (AP) maintaining the connection to the network including AP name, IP address and MAC address.
- Channel currently being used for wireless traffic
- Bit rate in Mbit.
- Current transmit power in mW
- Beacon period – the time between AP beacons in kilo-microseconds. (one kilo-microsecond = 1,024 microseconds)
- DTIM interval – A multiple of the beacon period that specifies how often the beacon contains a delivery traffic indication message (DTIM). The DTIM tells power saving devices a packet is waiting for them. For example, if DTIM = 3, then every third beacon contains a DTIM.
- Signal strength (RSSI) displayed in dBm and graphically
- Signal quality, a measure of the clarity of the signal displayed in percentage and graphically.

There are no user entries on this screen.

Note: After completing radio configuration, it is a good idea to review this screen to verify the radio has associated (no encryption, WEP) or authenticated (LEAP, any WPA), as indicated above.

Diags Tab

Start | Settings | System | Wi-Fi | Diags tab



SCU – Diags Tab

The Diags screen can be used for troubleshooting network traffic and radio connectivity issues.

- **(Re)connect** – Use this button to apply (or reapply) the current profile and attempt to associate or authenticate to the wireless LAN. All activity is logged in the Diagnostic Output box on the lower part of the screen.
- **Release/Renew** – Obtain a new IP address through release and renew. All activity is logged in the Diagnostic Output box. If a fixed IP address has been assigned to the radio, this is also noted in the Diagnostic Output box. Note that the current IP address is displayed above this button.
- **Start Ping** – Start a continuous ping to the IP address specified in the text box to the right of this button. Once the button is clicked, the ping begins and the button label changes to **Stop Ping**. Clicking the button ends the ping. The ping also ends when any other button on this screen is clicked or the user browses away from the Diags tab. The results of the ping are displayed in the Diagnostic Output box.
- **Diagnostics** – Also attempts to (re)connect to the wireless LAN. However, this option provides more data in the Diagnostic Output box than the (Re)connect option. This data dump includes radio state, profile settings, global settings, and a list of broadcast SSID APs.
- **Save To…** – Use this to save the results of the diagnostics to a text file. Use the explorer window to specify the name and location for the diagnostic file. The text file can viewed using an application such as WordPad.

Global Tab

Start | Settings | System | Wi-Fi | Global tab

The parameters on this panel can only be changed when an Admin is logged in with a password. The current values for the parameters can be viewed by the general user without requiring a password.

Note: Tap the Commit button to save changes. If the panel is exited before tapping the Commit button, changes are not saved!

Factory Default Settings

Roam Trigger	-65 dBm
Roam Delta	5 dBm
Roam Period	10 sec.
BG Channel Set	Full
DFS Channels	Off
DFS Scan Time	120 ms.
Ad Hoc Channel	1
Aggressive Scan	On
CCX Features	Optimized
WMM	Off
Auth Server	Type 1
TTLS Inner Method	Auto-EAP
PMK Caching	Standard
WAPI	Off (dimmed)
TX Diversity	On
RX Diversity	On Start on Main
Frag Threshold	2346
RTS Threshold	2347
LED	Off
Tray Icon	On
Hide Passwords	On
Admin Password	SUMMIT (or blank)
Auth Timeout	8 seconds
Certs Path	System
Ping Payload	32 bytes
Ping Timeout	5000 ms
Ping Delay ms	1000 ms

SCU – Global Tab

Custom Parameter Option

LXE does not support the parameter Custom option. The parameter value is displayed as “Custom” when the operating system registry has been edited to set the Summit parameter to a value that is not available from the parameter’s drop down list. Selecting Custom from the drop down list has no effect. Selecting any other value from the drop down list will overwrite the “custom” value in the registry.

Global Parameters

Parameter	Default	Function
Roam Trigger	-65 dBm	If signal strength is less than this trigger value, the client looks for a different Access Point with a stronger signal. Options are: -50 dBm, -55, -60, -65, -70, -75, -80, -85, -90 dBm or Custom.
Roam Delta	5 dBm	The amount by which a different Access Point signal strength must exceed the current Access Point signal strength before roaming to the different Access Point is attempted. Options are: 5 dBm, 10, 15, 20, 25, 30, 35 dBm or Custom.
Roam Period	10 sec.	The amount of time, after association or a roam scan with no roam, that the radio collects Received Signal Strength Indication (RSSI) scan data before a roaming decision is made. Options are: 5 sec, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60 seconds or Custom.
BG Channel Set	Full	Defines the 2.4GHz channels to be scanned for an AP when the radio is contemplating roaming. By specifying the channels to search, roaming time may be reduced over scanning all channels. Options are: Full (all channels) 1,6,11 (the most commonly used channels) 1,7,13 (for ETSI and TELEC radios only) Custom.
DFS Channels	Off	Support for 5GHZ 802.11a channels where support for DFS is required. Options are: On, Off. *Note: Not supported (always off) in some releases.*
DFS Scan Time	120 ms.	The amount of time the radio will passively scan each DFS channel to see if it will receive a beacon. Recommended value is 1.5 times that of the AP's beacon period.
Ad Hoc Channel	1	Use this parameter when the Radio Mode profile parameter is set to Ad Hoc. Specifies the channel to be used for an Ad Hoc connection to another client device. If a channel is selected that is not supported by the by the radio, the default value is used. Options are: 1 through 14 (the 2.4GHz channels) 36, 40, 44, 48 (the UNII-1 channels)
Aggressive Scan	On	When set to On and the current connection to an AP weakens, the radio aggressively scans for available APs. Aggressive scanning works with standard scanning (set through Roam Trigger, Roam Delta and Roam Period). Aggressive scanning should be set to On unless there is significant co-channel interference due to overlapping APs on the same channel. Options are: On, Off

Parameter	Default	Function
CCX or CCX Features	Optimized	Use of Cisco Compatible Extensions (CCX) radio management and AP specified maximum transmit power features. This parameter cannot be changed.
WMM	Off	Use of Wi-Fi Multimedia extensions. Options are: On, Off Default value cannot be changed.
Auth Server	Type 1	Specifies the type of authentication server. Options are: Type 1 (ACS server) and Type 2 (non-ACS server)
TTLS Inner Method	Auto-EAP	Authentication method used within the secure tunnel created by EAP-TTLS. Options are: AUTO-EAP (Any available EAP method), MSCHAPV2, MSCHAP, PAP, CHAP, EAP-MSCHAPV2
PMK Caching	Standard	Type of Pairwise Master Key (PMK) caching to use when WPA2 is in use. PMK caching is designed to speed up roaming between APs by allowing the client and the AP to cache the results of 802.1X authentications, eliminating the need to communicate with the ACS server. Standard PMK is used when there are no controllers. The reauthentication information is cached on the original AP. The client and the AP use the cached information to perform the four-way handshake to exchange keys. Opportunistic PMK (OPMK) is used when there are controllers. The reauthentication information cached on the controllers. The client and the controller behind the AP use the cached information to perform the four-way handshake to exchange keys. If the selected PMK caching method is not supported by the network infrastructure, every roam requires full 802.11X authentication, including interaction with the ACS server. If the active profile is using WPA2 CCKM, the global PMK Caching setting is ignored and the client attempts to use CCKM. Options are: Standard, OPMK *Note: This change does not take effect until after a Suspend/Resume cycle.*
WAPI	Off	Default is Off and dimmed (cannot be changed)
TX Diversity	On	How to handle antenna diversity when transmitting packets to the Access Point. Options are: Main only, and On.
RX Diversity	On Start on Main	How to handle antenna diversity when receiving packets from the Access Point. Options are: On-start on Main, and Main only
Frag Thresh	2346	If the packet size (in bytes) exceeds the specified number of bytes set in the fragment threshold, the packet is fragmented (sent as several pieces instead of as one block). Use a low setting in areas where communication is poor or where there is a great deal of wireless interference. This parameter cannot be changed.
RTS Thresh	2347	If the packet size exceeds the specified number of bytes set in the Request to Send (RTS) threshold, an RTS is sent before sending the packet. A low RTS threshold setting can be useful in areas where many client devices are

Parameter	Default	Function
		associating with the Access Point. This parameter cannot be changed.
LED	Off	The LED on the wireless card is not visible to the user when the wireless card is installed in a sealed mobile device. Options are: On, Off. This parameter cannot be changed.
Tray Icon	On	Determines if the Summit icon is displayed in the System tray. Options are: On, Off
Hide Password	On	When On, the Summit Config Utility masks passwords (characters on the screen are displayed as an *) as they are typed and when they are viewed. When Off, password characters are not masked. Options are: On, Off.
Admin Password	SUMMIT (or Blank)	A string of up to 64 alphanumeric characters that must be entered when the Admin Login button is tapped. If Hide Password is On, the password is masked when typed in the Admin Password Entry dialog box. The password is case sensitive. This value is masked when the Admin is logged out. Options are: none.
Auth Timeout	8 seconds	Specifies the number of seconds the Summit software waits for an EAP authentication request to succeed or fail. If the authentication credentials are stored in the active profile and the authentication times out, the association fails. No error message or prompting for corrected credentials is displayed. If the authentication credentials are not stored in the active profile and the authentication times out, the user is again prompted to enter the credentials. Options are: An integer from 3 to 60.
Certs Path	System	A valid directory path, of up to 64 characters, where WPA Certificate Authority and User Certificates are stored on the mobile device when not using the Windows certifcates store. LXE suggests ensuring the Windows folder path currently exists before assigning the path in this parameter. See Certificates for instructions on obtaining CA and User Certificates. This value is masked when the Admin is logged out. Options are: none. For example, when the valid certificate is stored as My Computer/System/MYCERTIFICATE.CER, enter System in the Certs Path text box as the Windows folder path.
Ping Payload	32 bytes	Maximum amount of data to be transmitted on a ping. Options are: 32 bytes, 64, 128, 256, 512, or 1024 bytes.
Ping Timeout ms	5000	The amount of time, in milliseconds, that a device will be continuously pinged. The Stop Ping button can be tapped to end the ping process ahead of the ping timeout. Options are: Any number between 0 and 30000 ms.

Parameter	Default	Function
Ping Delay ms	1000	The amount of time, in milliseconds, between each ping after a Start Ping button tap. Options are: Any number between 0 and 30000 ms.

Note: Tap the Commit button to save changes. If this panel is closed before tapping the Commit button, changes are not saved!

Sign-On vs. Stored Credentials

When using wireless security that requires a user name and password to be entered, the Summit Client Utility offers these choices:

- The Username and Password may be entered on the Credentials screen. If this method is selected, anyone using the device can access the network.
- The Username and Password are left blank on the Credentials screen. When the device attempts to connect to the network, a sign on screen is displayed. The user must enter the Username and Password at that time to authenticate.

How to: Use Stored Credentials

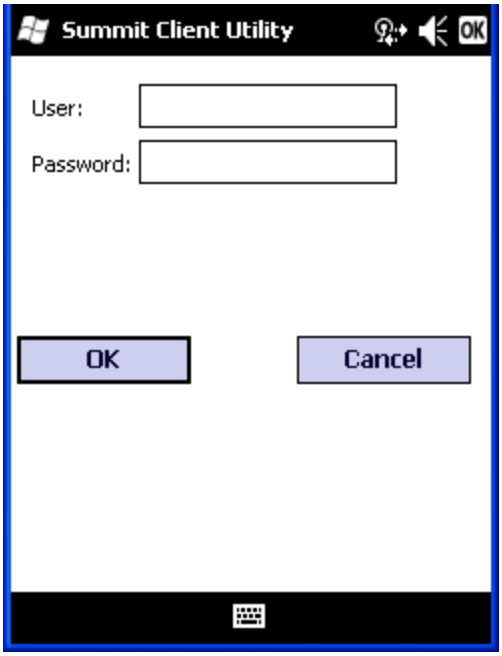
1. After completing the other entries in the profile, click on the **Credentials** button.
2. Enter the Username and Password on the Credentials screen and click the **OK** button.
3. Click the **Commit** button.
4. For LEAP and WPA/LEAP, configuration is complete.
5. For PEAP-MSCHAP and PEAP-GTC, importing the CA certificate into the Windows certificate store is optional.
6. For EAP-TLS, import the CA certificate into the Windows certificate store. Also import the User Certificate into the Windows certificate store.
7. Access the Credentials screen again. Make sure the **Validate server** and **Use MS store** checkboxes are checked.
8. The default is to use the entire certificate store for the CA certificate. Alternatively, use the **Browse** button next to the CA Cert (CA Certificate Filename) on the Credentials screen to select an individual certificate.
9. For EAP-TLS, also enter the User Cert (User Certificate filename) on the credentials screen by using the **Browse** button.
10. If using EAP FAST and manual PAC provisioning, input the PAC filename and password..
11. Click the **OK** button then the **Commit** button.
12. If changes are made to the stored credentials, click **Commit** to save those changes before making any additional changes to the profile or global parameters.
13. Verify the device is authenticated by reviewing the Status tab. When the device is property configured, the Status tab indicates the device is Authenticated and the method used.

Note: See Configuring the Profile for more details.

Note: If invalid credentials are entered into the stored credentials, the authentication will fail. No error message is displayed. The user may or may not be prompted to enter valid credentials.

How to: Use Sign On Screen

1. After completing the other entries in the profile, click on the **Credentials** button. Leave the Username and Password blank. No entries are necessary on the Credentials screen for LEAP or LEAP/WPA.
2. For PEAP-MSCHAP and PEAP-GTC, importing the CA certificate into the Windows certificate store is optional.
3. For EAP-TLS, import the CA certificate into the Windows certificate store. Also import the User Certificate into the Windows certificate store.
4. Access the Credentials screen again. Make sure the **Validate server** and **Use MS store** checkboxes are checked.
5. The default is to use the entire certificate store for the CA certificate. Alternatively, use the Browse button next to the CA Cert (CA Certificate Filename) on the Credentials screen to select an individual certificate.
6. For EAP-TLS, also enter the User Cert (User Certificate filename) on the credentials screen by using the **Browse** button.
7. Click the **OK** button then the **Commit** button.
8. When the device attempts to connect to the network, a sign-on screen is displayed.
9. Enter the Username and Password. Click the **OK** button.



Sign-On Screen

10. Verify the device is authenticated by reviewing the Status tab. When the device is property configured, the Status Tab indicates the device is Authenticated and the method used.
11. The sign-on screen is displayed after a reboot.

Note: See Configuring the Profile for more details.

If a user enters invalid credentials and clicks **OK**, the device associates but does not authenticate. The user is again prompted to enter credentials.

If the user clicks the **Cancel** button, the device does not associate. The user is not prompted again for credentials until:

- the device is rebooted,
- the radio is disabled then enabled,
- the **Reconnect** button on the Diags Tab is clicked or
- the profile is modified and the **Commit** button is clicked.

Windows Certificate Store vs. Certs Path

Note: It is important that all dates are correct on the MX7 Tecton and host computers when using any type of certificate. Certificates are date sensitive and if the date is not correct authentication will fail.

User Certificates

EAP-TLS authentication requires a user certificate. The user certificate must be stored in the Windows certificate store.

- To generate the user certificate, see Generating a User Certificate.
- To import the user certificate into the Windows certificate store, see Installing a User Certificate.
- A Root CA certificate is also needed. Refer to the section below.

Root CA Certificates

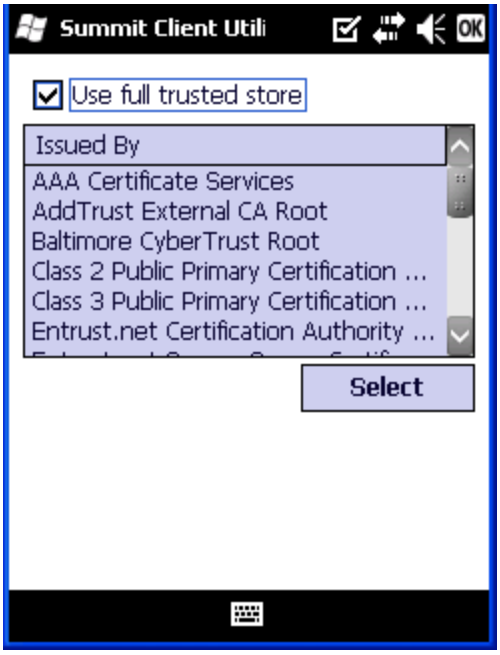
Root CA certificates are required for EAP/TLS, PEAP/GTC and PEAP/MSCHAP. Two options are offered for storing these certificates. They may be imported into the Windows certificate store or copied into the Certs Path directory.

How To: Use the Certs Path

1. See Generating a Root CA Certificate and follow the instructions to download the Root Certificate to a PC.
2. Copy the certificate to specified directory on the mobile device. The default location for Certs Path is \System. A different location may be specified by using the Certs Path global variable. Please note the location chosen for certificate storage should persist after a reboot.
3. When completing the Credentials screen for the desired authentication, do not check the **Use MS store** checkbox after checking the **Validate server** checkbox.
4. Enter the certificate name in the CA Cert textbox.
5. Click **OK** to exit the Credentials screen and then **Commit** to save the profile changes.

How To: Use Windows Certificate Store

1. See Generating a Root CA Certificate and follow the instructions to download the Root Certifcate to a PC.
2. To import the certificate into the Windows store, See Installing a Root CA Certificate.
3. When completing the Credentials screen for the desired authentication, be sure to check the **Use MS store** checkbox after checking the **Validate server** checkbox.
4. The default is to use all certificates in the store. If this is OK, skip to the last step.
5. Otherwise, to select a specific certificate click on the **Browse (…)** button.



Choose Certificate

6. Uncheck the **Use full trusted store** checkbox.
7. Select the desired certificate and click the **Select** button to return the selected certificate to the CA Cert textbox.
8. Click **OK** to exit the Credentials screen and then **Commit** to save the profile changes.

Configuring the Profile

Use the instructions in this section to complete the entries on the Profile tab according to the type of wireless security used by your network. The instructions that follow are the minimum required to successfully connect to a network. Your system may require more parameters than are listed in these instructions. Please see your system administrator for complete information about your network and its wireless security requirements.

To begin the configuration process:

- On the Main Tab, click the Admin Login button and enter the password.
- LXE recommends editing the default profile with the parameters for your network. Select the Default profile from the pull down menu.
- Make any desired parameter changes as described in the applicable following section determined by network security type and click the **Commit** button to save the changes.

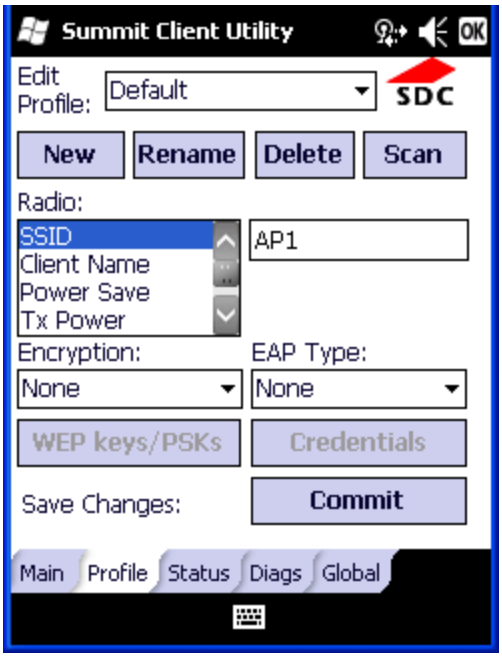
IMPORTANT – Remember to click the Commit button after making changes to ensure the changes are saved. Many versions of the SCU display a reminder if the Commit button is not clicked before an attempt is made to close or browse away from the tab in focus if there are unsaved changes.

If changes are made to the *stored credentials*, click Commit to save those changes first before making any additional changes.

No Security

To connect to a wireless network with no security, make sure the following profile options are used.

- Enter the **SSID** of the Access Point assigned to this profile
- Set **EAP Type** to **None**
- Set **Encryption** to **None**
- Set **Auth Type** to **Open**



No Security Profile Configuration

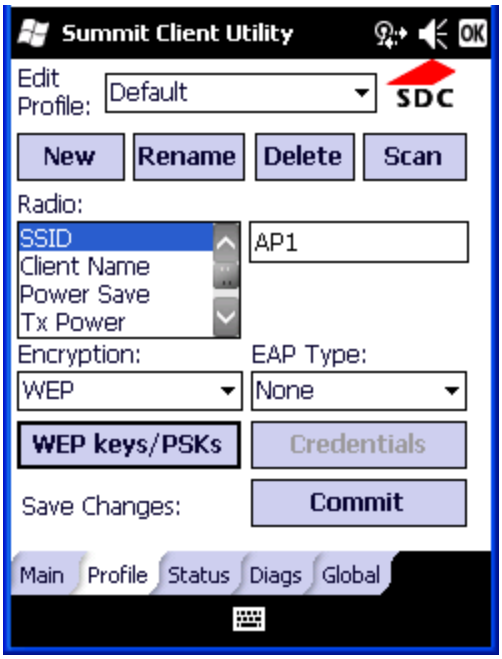
Once configured, click the **Commit** button.

Ensure the correct Active Profile is selected on the Main tab and perform a Suspend/Resume. The SCU Main tab shows the device is associated after the radio connects to the network.

WEP

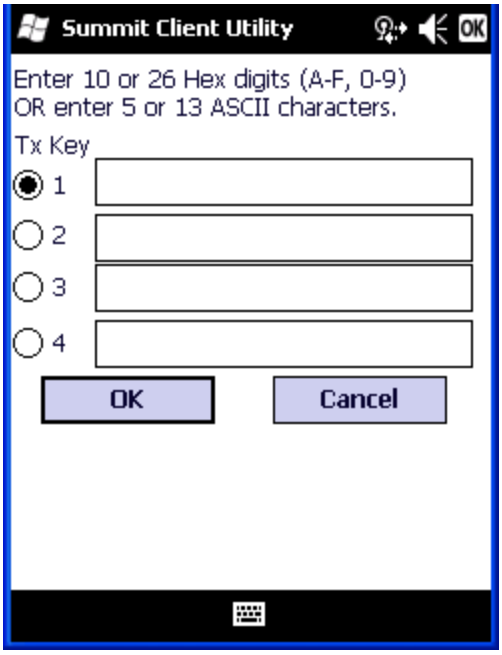
To connect using WEP, make sure the following profile options are used.

- Enter the **SSID** of the Access Point assigned to this profile
- Set **EAP Type** to **None**
- Set **Encryption** to **WEP**
- Set **Auth Type** to **Open**



WEP Profile Configuration

Click the **WEP keys/PSKs** button.



WEP Keys

Valid keys are 10 hexadecimal or 5 ASCII characters (for 40-bit encryption) or 26 hexadecimal or 13 ASCII characters (for 128-bit encryption). Enter the key(s) and click **OK**.

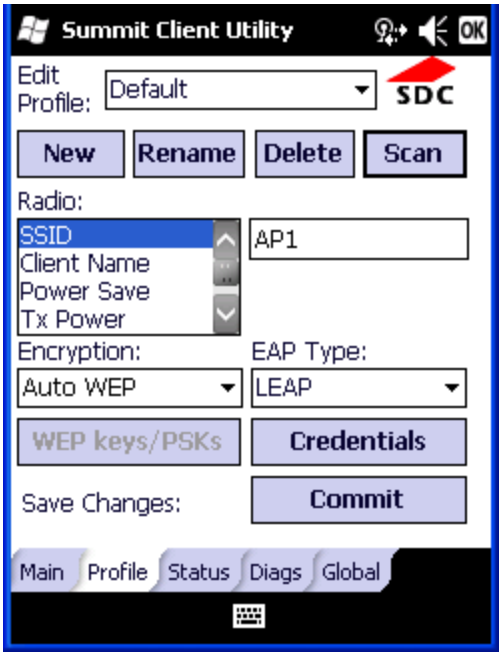
Once configured, click the **Commit** button.

Ensure the correct Active Profile is selected on the Main tab and perform a Suspend/Resume. The SCU Main tab shows the device is associated after the radio connects to the network.

LEAP

To use LEAP (without WPA), make sure the following profile options are used.

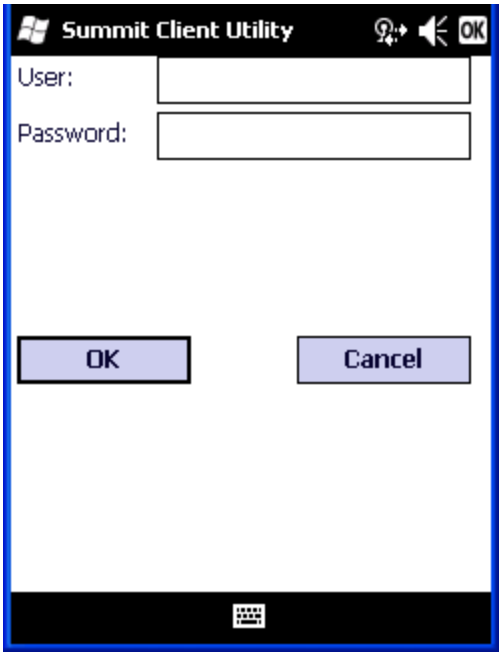
- Enter the **SSID** of the Access Point assigned to this profile
- Set **EAP Type** to **LEAP**
- Set **Encryption** to **WEP EAP**
- Set **Auth Type** as follows:
    - If the Cisco/CCX certified AP is configured for open authentication, set the **Auth Type** radio parameter to **Open**.
    - If the AP is configured to use shared key or passphrase, set the Auth Type radio parameter to **Shared**.
    - If the AP is configured for network EAP only, set the **Auth Type** radio parameter to **LEAP**.



LEAP Profile Configuration

See Sign-On vs. Stored Credentials for information on entering credentials.

To use Stored Credentials, click on the **Credentials** button. No entries are necessary for Sign-On Credentials as the user will be prompted for the Username and Password when connecting to the network.



LEAP Credentials

Enter the Domain\Username (if the Domain is required), otherwise enter the Username.

Enter the password. Click **OK** then click **Commit.**

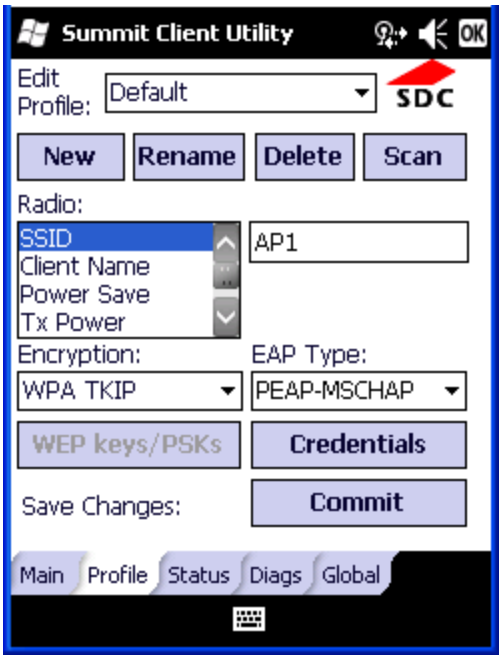
Ensure the correct Active Profile is selected on the Main tab and perform a Suspend/Resume. The SCU Main tab shows the device is associated after the radio connects to the network.

PEAP/MSCHAP

To use PEAP/MSCHAP, make sure the following profile options are used.

- Enter the **SSID** of the Access Point assigned to this profile
- Set **EAP Type** to **PEAP-MSCHAP**
- Set **Encryption** to **WPA TKIP**
- Set **Auth Type** to **Open**

To use another encryption type, select WPA CCKM, WPA2 AES or WPA2 CCKM for encryption and complete other entries as detailed in this section.



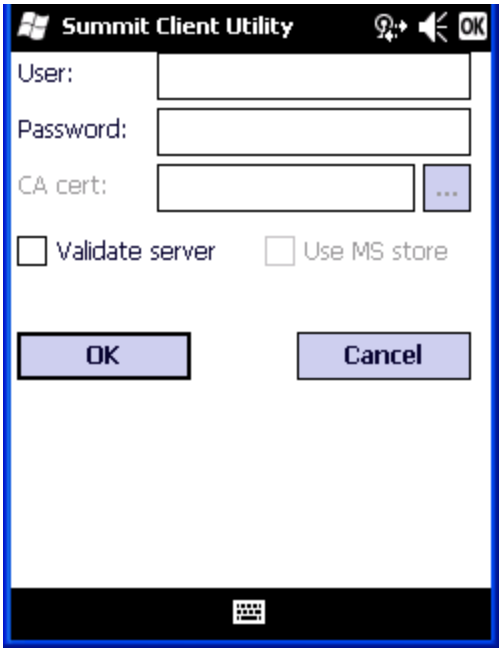
PEAP/MSCHAP Profile Configuration

See Sign-On vs. Stored Credentials for information on entering credentials.

Click the **Credentials** button.

- No entries except the CA Certificate Filename are necessary for Sign-On Credentials as the user will be prompted for the User Name and Password when connecting to the network.
- For Stored Credentials, User, Password and the CA Certificate Filename must be entered.

Enter these items as directed below.



PEAP/MSCHAP Credentials

Enter the Domain\Username (if the Domain is required), otherwise enter the Username.

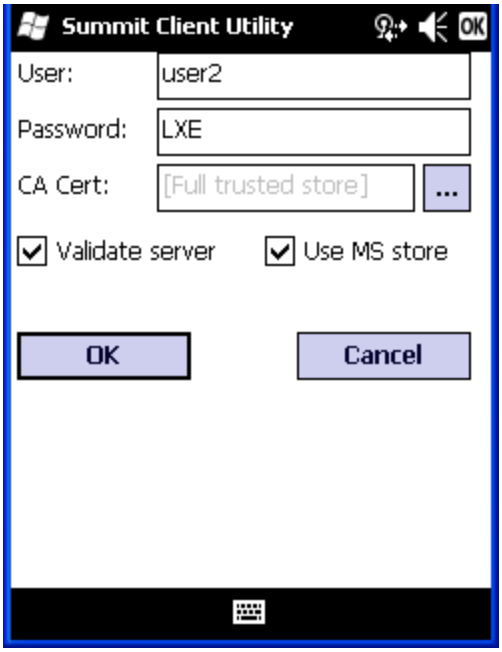
Enter the password.

Leave the CA Certificate File Name blank for now.

Click **OK** then click **Commit**. Ensure the correct Active profile is selected on the Main Tab.

See Windows Certificate Store vs. Certs Path for more information on certificate storage.

Once successfully authenticated, import the CA certificate into the Windows certificate store. Return to the Credentials screen and check the **Validate server** checkbox.



PEAP/MSCHAP Certificate Filename

If using the Windows certificate store:

- Check the **Use MS store** checkbox. The default is to use the Full Trusted Store.
- To select an individual certificate, click on the **Browse** button.
- Uncheck the **Use full trusted store** checkbox.
- Select the desired certificate and click Select. You are returned to the Credentials screen.

If using the Certs Path option:

- Leave the **Use MS store** box unchecked.
- Enter the certificate filename in the CA Cert textbox.

Click **OK** then click **Commit**.

The device should be authenticating the server certificate and using PEAP/MSCHAP for the user authentication.

Ensure the correct Active Profile is selected on the Main tab and perform a Suspend/Resume. The SCU Main tab shows the device is associated after the radio connects to the network.

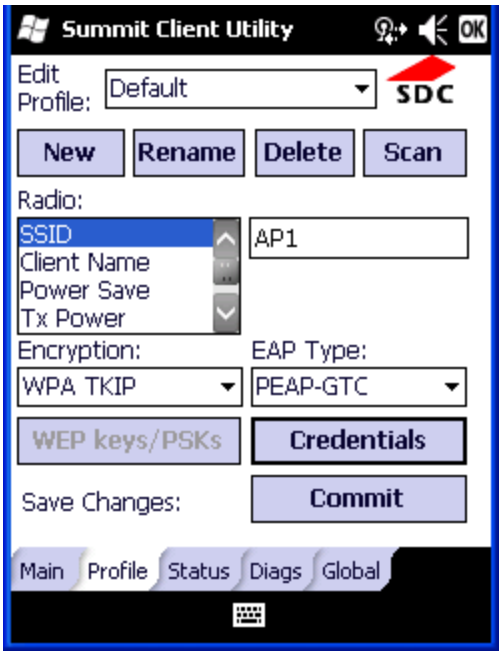
Note: The date must be properly set on the device to authenticate a certificate.

PEAP/GTC

To use PEAP/GTC, make sure the following profile options are used.

- Enter the **SSID** of the Access Point assigned to this profile
- Set **EAP Type** to **PEAP-GTC**
- Set **Encryption** to **WPA TKIP**
- Set **Auth Type** to **Open**

To use another encryption type, select WPA CCKM, WPA2 AES or WPA2 CCKM for encryption and complete other entries as detailed in this section.



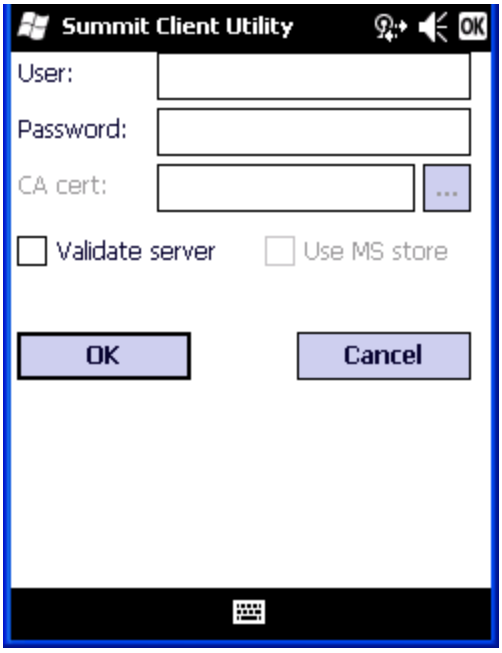
PEAP/GTC Profile Configuration

See Sign-On vs. Stored Credentials for information on entering credentials.

Click the **Credentials** button.

- No entries except the CA Certificate Filename are necessary for Sign-On Credentials as the user will be prompted for the User Name and Password when connecting to the network.

Enter these items as directed below.



PEAP/GTC Credentials

Enter the Domain\Username (if the Domain is required), otherwise enter the Username.

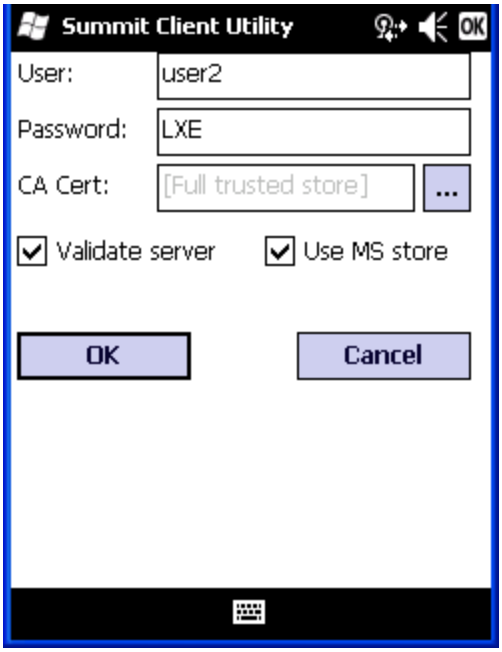
Enter the password.

Leave the CA Certificate File Name blank for now.

Click **OK** then click **Commit**. Ensure the correct Active Profile is selected on the Main Tab.

See Windows Certificate Store vs. Certs Path for more information on certificate storage.

Once successfully authenticated, import the CA certificate into the Windows certificate store. Return to the Credentials screen and check the **Validate server** checkbox.



PEAP/GTC Certificate Filename

If using the Windows certificate store:

- Check the **Use MS store** checkbox. The default is to use the Full Trusted Store.
- To select an individual certificate, click on the **Browse** button.
- Uncheck the **Use full trusted store** checkbox.
- Select the desired certificate and click **Select**. You are returned to the Credentials screen.

If using the Certs Path option:

- Leave the **Use MS store box** unchecked.
- Enter the certificate filename in the CA Cert textbox.

Click **OK** then click **Commit**.

The device should be authenticating the server certificate and using PEAP/GTC for the user authentication.

Ensure the correct Active Profile is selected on the Main tab and perform a Suspend/Resume. The SCU Main tab shows the device is associated after the radio connects to the network.

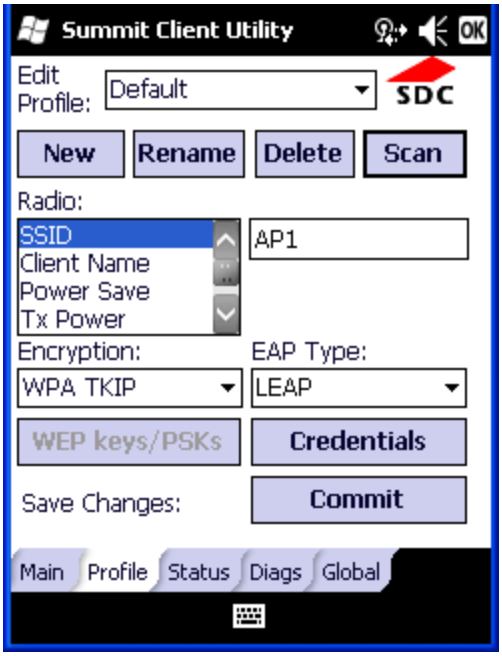
Note: The date must be properly set on the device to authenticate a certificate.

WPA/LEAP

To use WPA/LEAP, make sure the following profile options are used.

- Enter the **SSID** of the Access Point assigned to this profile
- Set **EAP Type** to **LEAP**
- Set **Encryption** to **WPA TKIP**
- Set **Auth Type** as follows:
    - If the Cisco/CCX certified AP is configured for open authentication, set the **Auth Type** radio parameter to **Open**.
    - If the AP is configured to use shared key or passphrase, set the Auth Type radio parameter to **Shared**.
    - If the AP is configured for network EAP only, set the **Auth Type** radio parameter to **LEAP**.

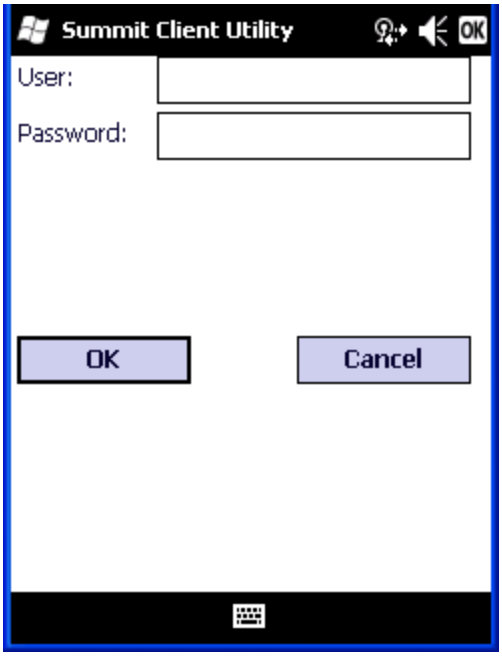
To use another encryption type, select WPA CCKM, WPA2 AES or WPA2 CCKM for encryption and complete other entries as detailed in this section.



WPA/LEAP Profile Configuration

See Sign-On vs. Stored Credentials for information on entering credentials.

To use Stored Credentials, click on the **Credentials** button. No entries are necessary for Sign-On Credentials as the user will be prompted for the Username and Password when connecting to the network.



WPA/LEAP Credentials

Enter the Domain\Username (if the Domain is required), otherwise enter the Username.

Enter the password.

Click **OK** then click the **Commit** button.

Ensure the correct Active Profile is selected on the Main tab and perform a Suspend/Resume. The SCU Main tab shows the device is associated after the radio connects to the network.

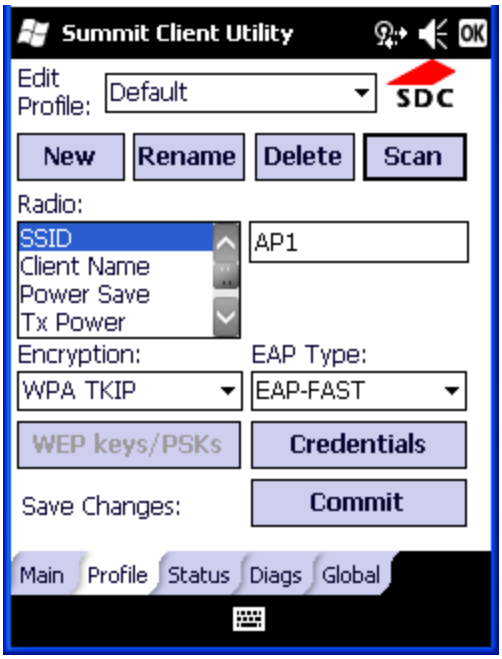
EAP-FAST

To use EAP-FAST, make sure the following profile options are used.

- Enter the **SSID** of the Access Point assigned to this profile
- Set **EAP Type** to **EAP-FAST**
- Set **Encryption** to **WPA TKIP**
- Set **Auth Type** to **Open**

To use another encryption type, select WPA CCKM, WPA2 AES or WPA2 CCKM for encryption and complete other entries as detailed in this section.

The SCU supports EAP-FAST with automatic or manual PAC provisioning. With automatic PAC provisioning, the user credentials, whether entered on the saved credentials screen or the sign on screen, are sent to the RADIUS server. The RADIUS server must have auto provisioning enabled to send the PAC provisioning credentials to the MX7 Tecton.



EAP-FAST Profile Configuration

For automatic PAC provisioning, once a username/password is authenticated, the PAC information is stored on the MX7 Tecton. The same username/password must be used to authenticate each time. See the note below for more details.

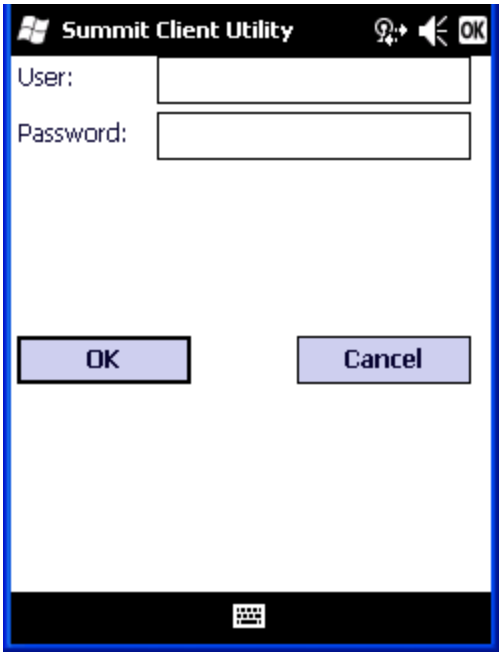
For manual PAC provisioning, the PAC filename and Password must be entered.

See Sign-On vs. Stored Credentials for information on entering credentials.

The entries on the Credentials screen are determined by the type of credentials (stored or sign on) and the type of PAC provisioning (automatic or manual).

Click on the **Credentials** button.

To use Stored Credentials, click on the **Credentials** button. No entries are necessary for Sign-On Credentials with automatic PAC provisioning as the user will be prompted for the Username and Password when connecting to the network.



EAP-FAST Credentials

To use Sign-On credentials:

- Do not enter a User and Password as the user will be prompted for the Username and Password when connecting to the network.

To use Stored Credentials:

- Enter the Domain\Username (if the Domain is required), otherwise enter the Username.
- Enter the password.

To use Automatic PAC Provisioning:

- No additional entries are required.

To use manual PAC Provisioning:

- Enter the PAC Filename and PAC Password.
- The PAC file must be copied to the directory specified in the Certs Path global variable. The PAC file must not be read only.

Ensure the correct Active Profile is selected on the Main tab and perform a Suspend/Resume. The SCU Main tab shows the device is associated after the radio connects to the network.

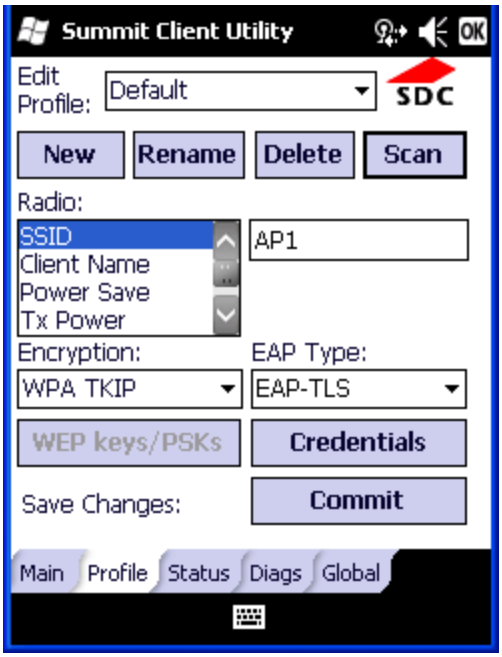
Note: When using Automatic PAC Provisioning, once authenticated, there is a file stored in the \System folder with the PAC credentials. If the username is changed, that file must be deleted. The filename is autoP.00.pac.

EAP-TLS

To use EAP-TLS, make sure the following profile options are used.

- Enter the **SSID** of the Access Point assigned to this profile
- Set **EAP Type** to **EAP-TLS**
- Set **Encryption** to **WPA TKIP**
- Set **Auth Type** to **Open**

To use another encryption type, select WPA CCKM, WPA2 AES or WPA2 CCKM for encryption and complete other entries as detailed in this section.



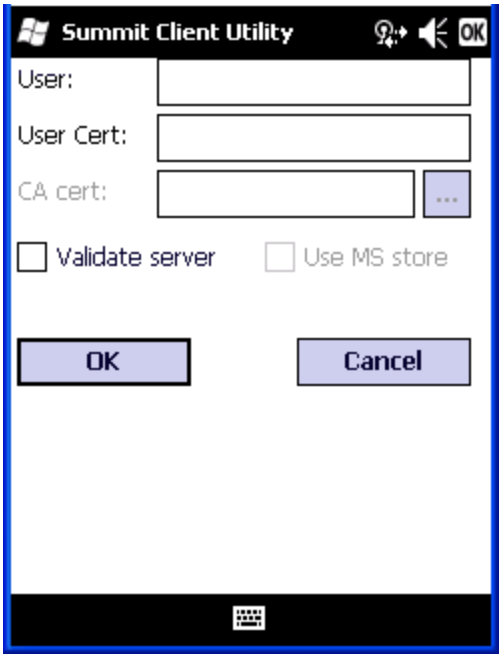
EAP-TLS Profile Configuration

See Sign-On vs. Stored Credentials for information on entering credentials.

Click the **Credentials** button.

- No entries except the User Certificate Filename and the CA Certificate Filename are necessary for Sign-On Credentials as the user will be prompted for the User Name when connecting to the network.
- For Stored Credentials, User and the CA Certificate Filename must be entered.

Enter these items as directed below.



EAP-TLS Credentials

Enter the Domain\Username (if the Domain is required), otherwise enter the Username.

Leave the certificate file name entries blank for now.

Click **OK** then click **Commit**. Ensure the correct Active Profile is selected on the Main tab.

Once successfully authenticated, import the user certificate into the Windows certificate store.

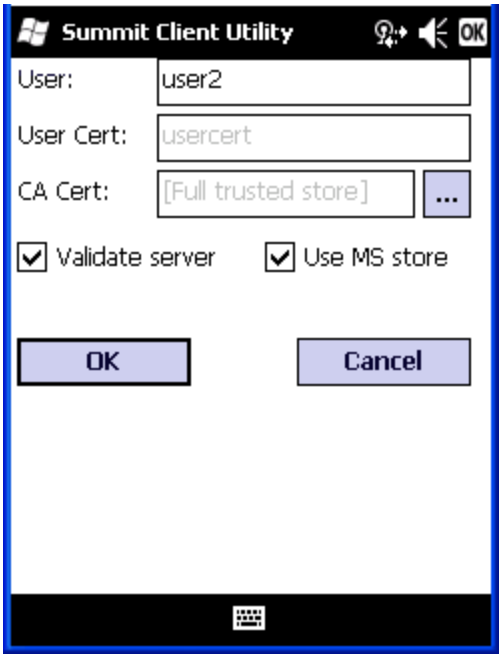
Return to the Credentials screen.

Use the **Browse** button to locate the User Cert from the certificate store. Highlight the desired certificate and press the **Select** button. The name of the certificate is displayed in the User Cert box.

Some versions of the SCU require a User Cert password. If this entry field is present, enter the password for the user certificate in the User Cert pwd box.

See Windows Certificate Store vs. Certs Path for more information on certificate storage.

Check the **Validate server** checkbox.



EAP-TLS Credentials

If using the Windows certificate store:

- Check the **Use MS store** checkbox. The default is to use the Full Trusted Store.
- To select an individual certificate, click on the **Browse** button.
- Uncheck the **Use full trusted store** checkbox.
- Select the desired certificate and click **Select**. You are returned to the Credentials screen.

If using the Certs Path option:

- Leave the Use MS store box unchecked.
- Enter the certificate filename in the CA Cert textbox.

Click **OK** then click **Commit**.

The MX7 Tecton should be authenticating the server certificate and using EAP-TLS for the user authentication.

Ensure the correct Active Profile is selected on the Main tab and perform a Suspend/Resume. The SCU Main tab shows the device is associated after the radio connects to the network.

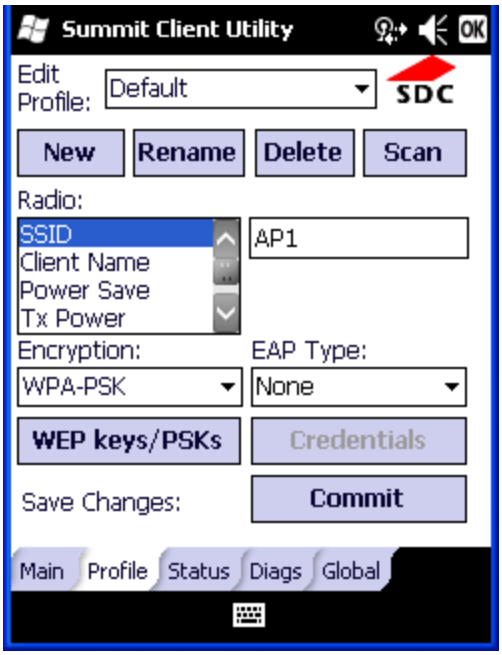
See Certificates for information on generating a Root CA certificate or a User certificate.

Note: The date must be properly set on the device to authenticate a certificate.

WPA PSK

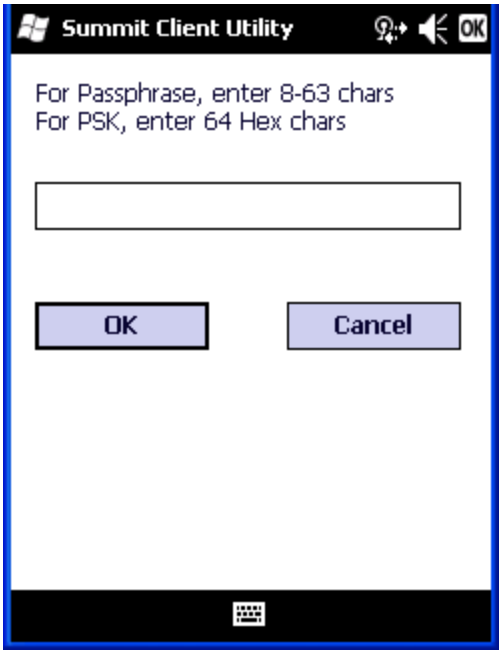
To connect using WPA/PSK, make sure the following profile options are used:

- Enter the **SSID** of the Access Point assigned to this profile
- Set **EAP Type** to **None**
- Set **Encryption** to **WPA PSK** or **WPA2 PSK**
- Set **Auth Type** to **Open**



WPA/PSK Profile Configuration

Click the **WEP keys/PSKs** button.



PSK Entry

This value can be 64 hex characters or an 8 to 63 byte ASCII value. Enter the key and click **OK**.

Once configured, click the **Commit** button.

Ensure the correct Active Profile is selected on the Main tab and perform a Suspend/Resume. The SCU Main tab shows the device is associated after the radio connects to the network.

Certificates

Note: Please refer to the LXE Security Primer to prepare the Authentication Server and Access Point for communication.

Note: It is important that all dates are correct on the MX7 Tecton and host computers when using any type of certificate. Certificates are date sensitive and if the date is not correct authentication will fail.

Quick Start

Root Certificates are necessary for EAP-TLS, PEAP/GTC and PEAP/MSCHAP.

1. Generate a Root CA Certificate and download it to a PC.
2. Connect the MX7 Tecton to the desktop PC using ActiveSync and copy the certificate to the MX7 Tecton \System folder.
3. Install the Root CA Certificate.

User Certificates are necessary for EAP-TLS

1. Generate a User Certificate and download it to a PC.
2. Install the User Certificate on the PC.
3. Export the User Certificate as a .PFX file.
4. Connect the MX7 Tecton to the desktop PC using ActiveSync and copy the certificate to the MX7 Tecton \System folder.
5. Install the User Certificate.
6. After installation, perform a Suspend/Resume.
7. Verify installation.

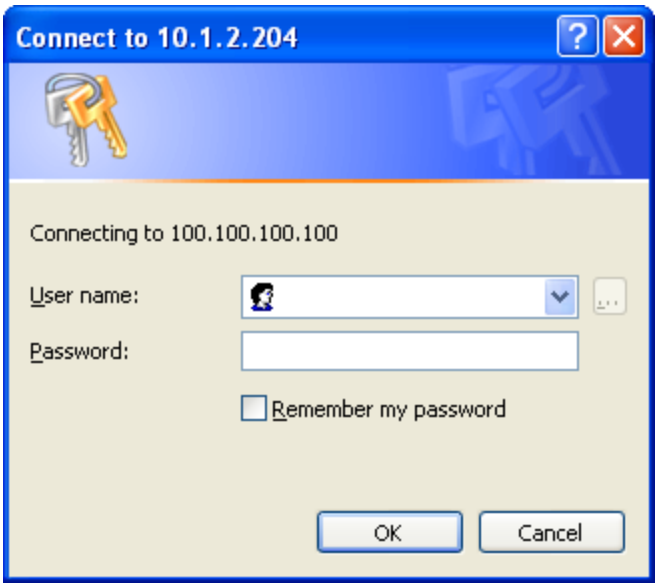
Generating a Root CA Certificate

Note: It is important that all dates are correct on the MX7 Tecton and host computers when using any type of certificate. Certificates are date sensitive and if the date is not correct authentication will fail.

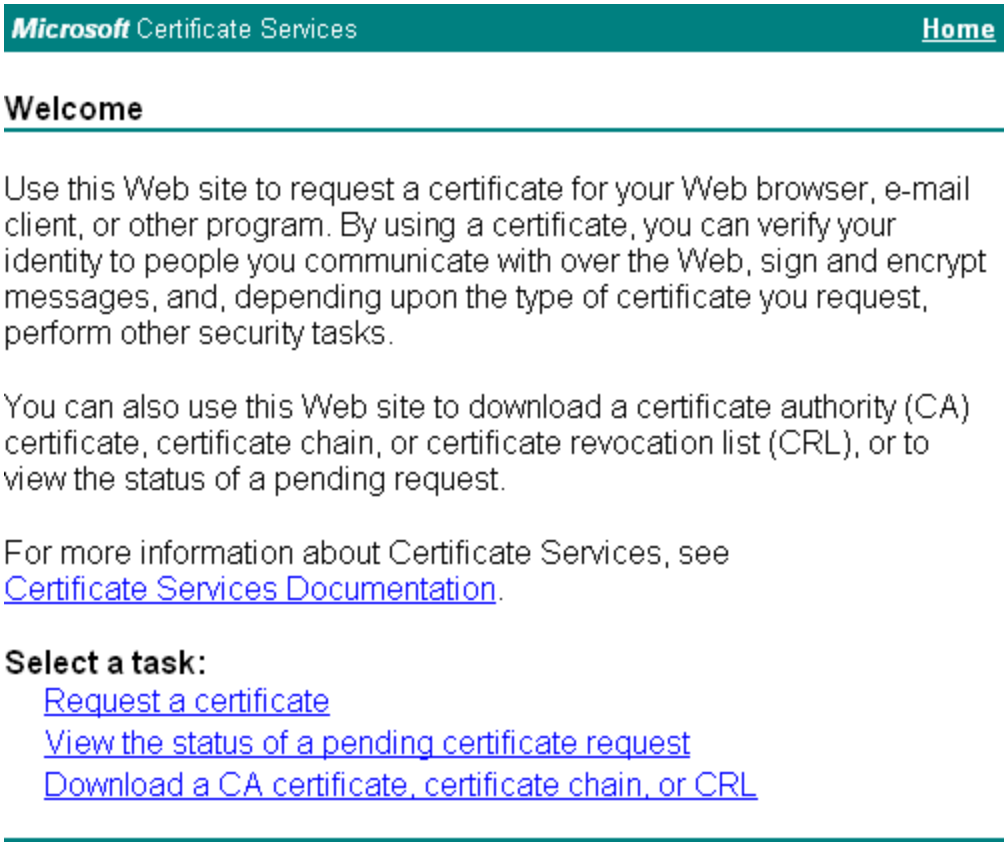
The easiest way to get the root CA certificate is to use a browser on a PC to navigate to the Certificate Authority. To request the root CA certificate, open a browser to

http://<CA IP address>/certsrv.

Sign into the CA with any valid username and password.



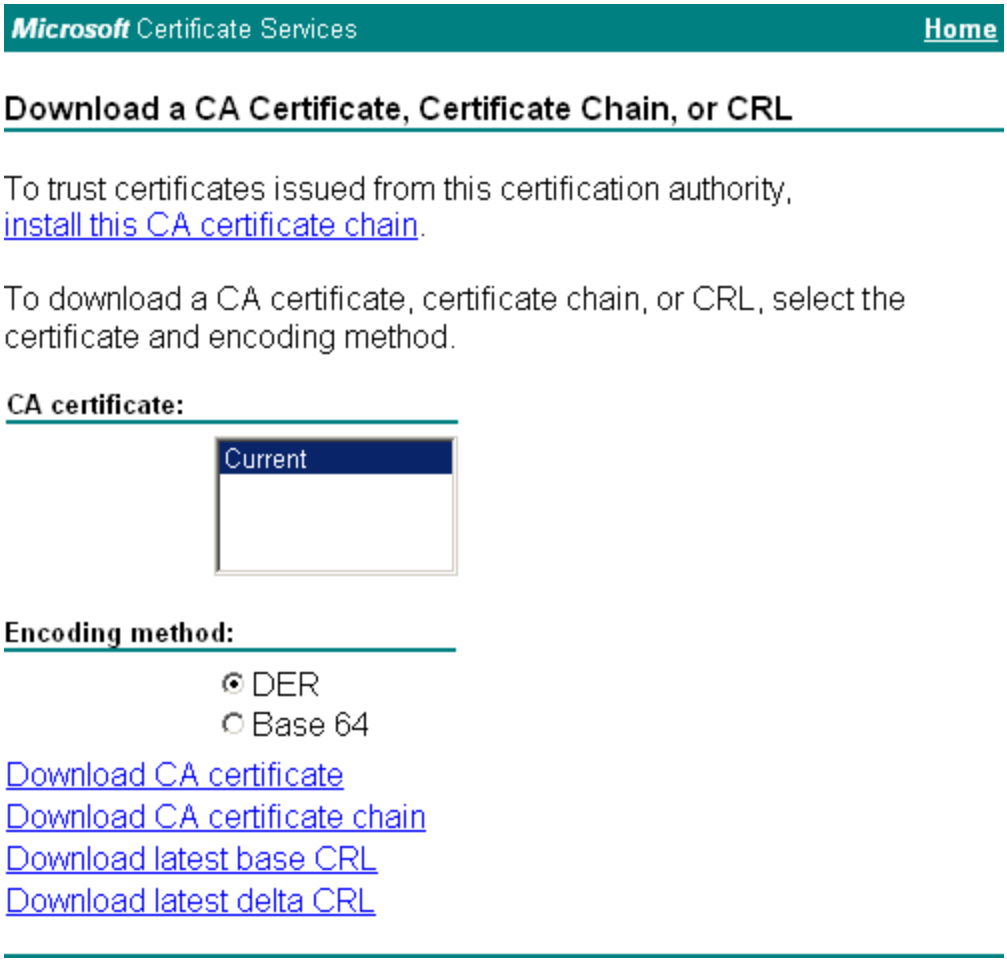
Logon to Certificate Authority


Microsoft Certificate Services
Home
Welcome
Use this Web site to request a certificate for your Web browser, e-mail client, or other program. By using a certificate, you can verify your identity to people you communicate with over the Web, sign and encrypt messages, and, depending upon the type of certificate you request, perform other security tasks.
You can also use this Web site to download a certificate authority (CA) certificate, certificate chain, or certificate revocation list (CRL), or to view the status of a pending request.
For more information about Certificate Services, see Certificate Services Documentation.
Select a task:
Request a certificate
View the status of a pending certificate request
Download a CA certificate, certificate chain, or CRL

Certificate Services Welcome Screen

Click the **Download a CA certificate, certificate chain or CRL** link.

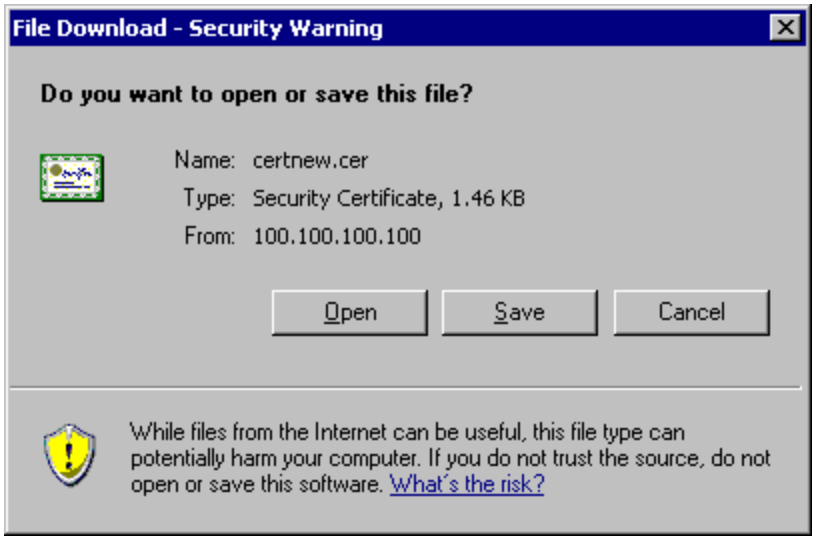
Make sure the correct root CA certificate is selected in the list box.


Microsoft Certificate Services
Home
Download a CA Certificate, Certificate Chain, or CRL
To trust certificates issued from this certification authority, install this CA certificate chain.
To download a CA certificate, certificate chain, or CRL, select the certificate and encoding method.
CA certificate:
Current
Encoding method:
DER
Base 64
Download CA certificate
Download CA certificate chain
Download latest base CRL
Download latest delta CRL

Download CA Certificate Screen

Click the **DER** button.

To download the CA certificate, click on the **Download CA certificate** link.


File Download - Security Warning
Do you want to open or save this file?
Name: certnew.cer
Type: Security Certificate, 1.46 KB
From: 100.100.100.100
Open
Save
Cancel
While files from the Internet can be useful, this file type can potentially harm your computer. If you do not trust the source, do not open or save this software. What's the risk?

Download CA Certificate Screen

Click the **Save** button and save the certificate. Make sure to keep track of the name and location of the certificate.

Install the certificate on the MX7 Tecton.

Installing a Root CA Certificate

Note: This section is only if the Windows certificate store is used. If the certificate store is not used, copy the certificate to the \System folder or other path specified in the Summit Certs global parameter.

Copy the certificate file to the MX7 Tecton. The certificate file has a .CER extension. Locate the file and tap it.

A certificate installation warning text box is displayed:

> *Your device is being asked to install a security certificate. You should block unless you require certificates for processes such as synchronizing with Exchange Server or connecting to a wireless network.*

Tap **More** to view the remainder of the warning in the text box:

> *Installing the certificate will cause your device to trust digital certificates from the requester. Malicious requesters may try to mislead you about their identity. Do you want to block this certificate?*

Tap **Install** to continue the installation. An installation successful message is displayed.

You can view any installed user certificates by selecting **Start | Settings | System** and tapping the **Certificates** icon.

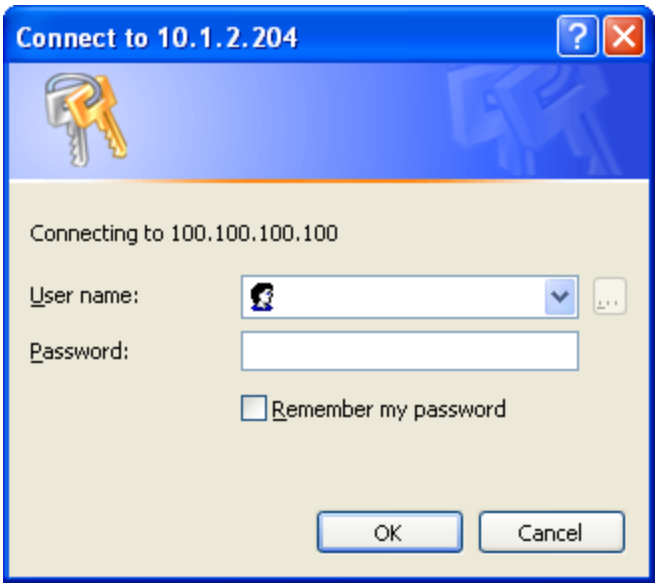
Installed root certificates are displayed on the **Root** tab.

Generating a User Certificate

The easiest way to get the user certificate is to use the browser on a PC to navigate to the Certificate Authority. To request the user certificate, open a browser to

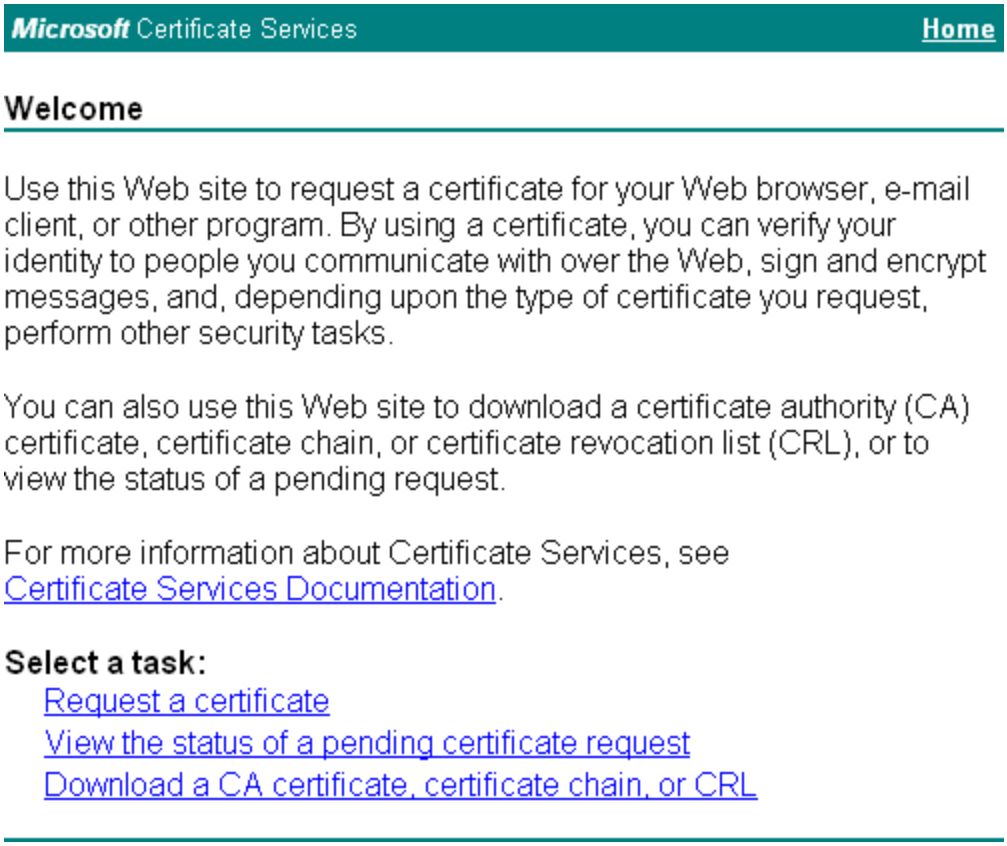
http://<CA IP address>/certsrv.

Sign into the CA with the username and password of the person who will be logging into the mobile device.



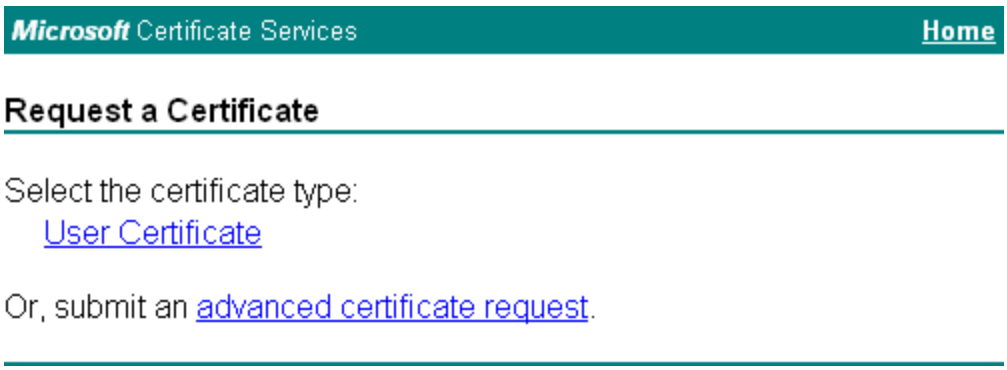
Logon to Certificate Authority

This process saves a user certificate file. There is no separate private key file as used on Windows CE devices.


Microsoft Certificate Services
Home
Welcome
Use this Web site to request a certificate for your Web browser, e-mail client, or other program. By using a certificate, you can verify your identity to people you communicate with over the Web, sign and encrypt messages, and, depending upon the type of certificate you request, perform other security tasks.
You can also use this Web site to download a certificate authority (CA) certificate, certificate chain, or certificate revocation list (CRL), or to view the status of a pending request.
For more information about Certificate Services, see Certificate Services Documentation.
Select a task:
Request a certificate
View the status of a pending certificate request
Download a CA certificate, certificate chain, or CRL

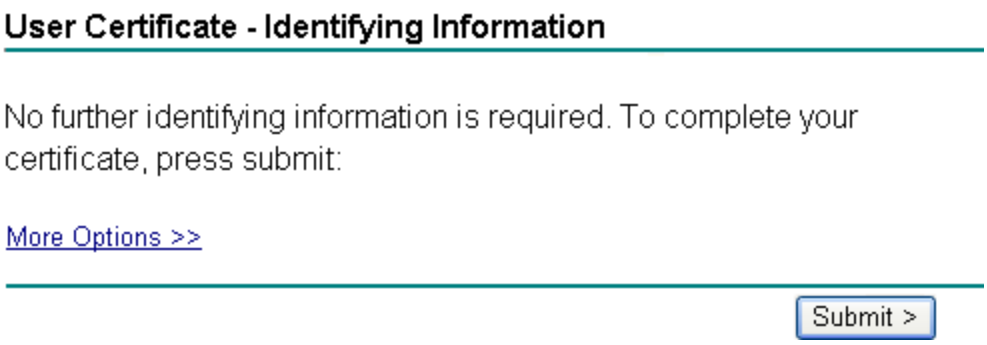
Certificate Services Welcome Screen

Click the **Request a certificate** link.



Request a Certificate Screen

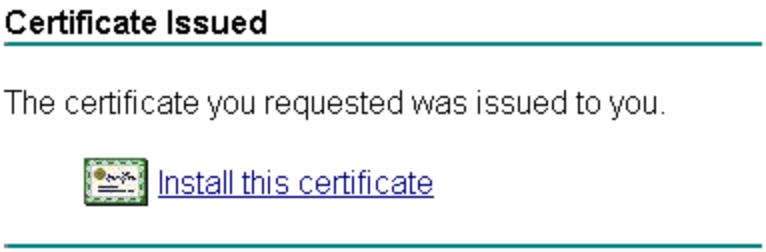
Click on the **User Certificate** link.


User Certificate - Identifying Information
No further identifying information is required. To complete your certificate, press submit:
More Options >>
Submit >

Submit User Certificate Request Screen

Click on the **Submit** button. if there is a message box asking if you want to confirm the request, click **Yes**.

The User Certificate is issued.



Advanced Certificate Details

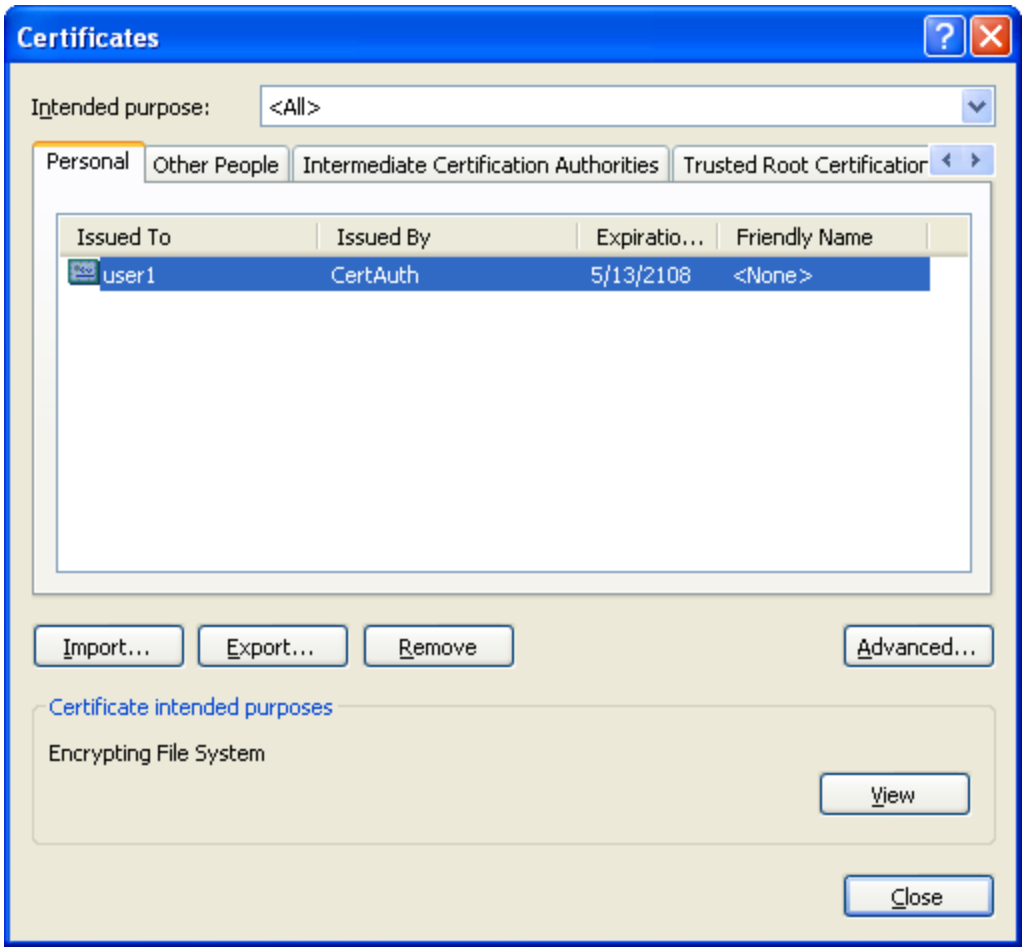
Install the user certificate on the requesting computer by clicking the **Install this certificate** link.

Export the certificate as described below.

Exporting a User Certificate

Start Internet Explore on the PC that requested the certificate.

Select **Tools | Internet Options | Content** and click the **Certificates** button.

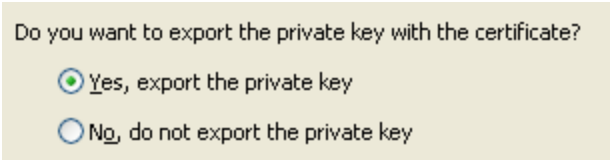


Certificate Listing

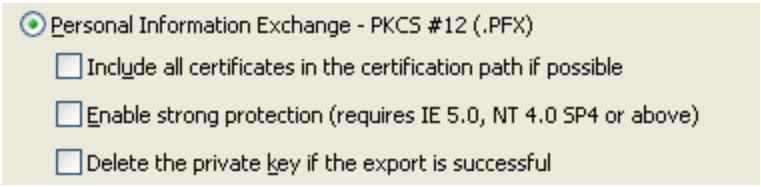
Make sure the **Personal** tab is selected. Highlight the certificate and click the **Export** button.

The Certificate Export Wizard is started

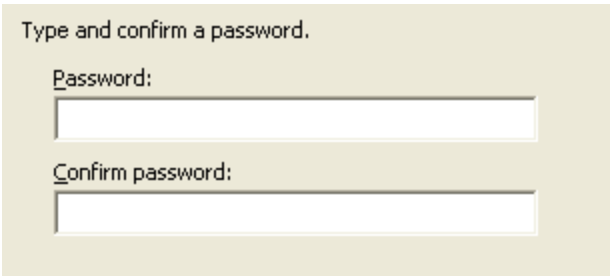
Select **Yes, export the private key** and click Next.



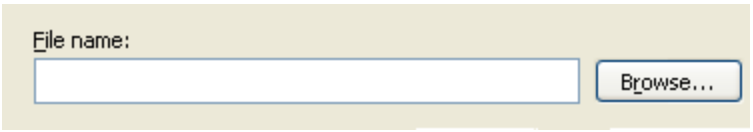
Uncheck **Enable strong protection** and check **Next**. The certificate type must be PKCS #12 (.PFX).


Personal Information Exchange - PKCS #12 (.PFX)
Include all certificates in the certification path if possible
Enable strong protection (requires IE 5.0, NT 4.0 SP4 or above)
Delete the private key if the export is successful

When the private key is exported, you must enter the password, confirm the password and click **Next**. Be sure to remember the password as it is needed when installing the certificate.



Supply the file name for the certificate. Use the **Browse** button to select the folder where you wish to store the certificate. The certificate is saved with a .PFX extension.



Click Finish and OK to close the Successful Export message.

Locate the User Certificate in the specified location. Copy to the MX7 Tecton. Install the user certificate.

Installing a User Certificate

After generating and exporting the user certificate, copy it from the PC to the MX7 Tecton. Copy the certificate to a location on the MX7 Tecton, such as a storage card or the \System folder.

Locate the certificate file (it has a .PFX extension) and tap on it. You are prompted for the password that was assigned when the certificate was exported.

Enter the password and tap **Done**. A message is displayed that the certificate installation was successful.

You can view any installed user certificates by selecting **Start | Settings | System** and tapping the **Certificates** icon.

Installed user certificates are displayed on the **Personal** tab.

Keymaps

Remember : “Sticky” keys are also known as “second” function keys. Ctl/Ctrl, Alt, Shft, Blue and Orange keys are “sticky keys”. Sticky keys do not need to be held down before pressing the next (or desired) key. It is valid to use combined modifiers on specific keys.

The key mapping in this section relates to the physical keypad. See the Input Panel for the Virtual (or Soft) Keypad used with the stylus.

55 key Alphanumeric Keymap - Primary Delete

- The following keymap is used on an MX7 Tecton that is NOT running an LXE Terminal Emulator. LXE terminal emulators use a separate keymap.
- When using a sequence of keys that includes a sticky key, press the sticky key first, release it, then press the rest of the key sequence.
- When using a sequence of keys that includes the Orange or Blue keys, press the color key first then the rest of the key sequence.
- Tapping the Power key when in any sticky mode (Blue, Orange, Shift, etc.) either turns the device On (when Off) or places it in Suspend (when On).
- Alphabetic keys default to lower case letters. Press the Shft key, then the alphabetic key for an uppercase letter.
- When the computer boots, the default condition of Caps (or CapsLock) is Off. The Caps (or CapsLock) condition can be toggled with Blue plus Tab key sequence.
- For those keymaps that require remapping (MAP), keys can be remapped using the Buttons Panel (Start | Settings | Personal | Buttons).

To get this Key / Function	Press these Keys in this Order			
Power / Suspend	Power			
Field Exit (default VK_PAUSE) MAP = Mappable	Blue (MAP)	Orange (MAP)	Shift (MAP)	Diamond #1
Volume Adjust Mode	Orange	Scan	Up Arrow / Down Arrow	
Volume Adjust Mode	Blue	V	Up Arrow / Down Arrow	
Display Backlight Brightness Adjust Mode	Blue	Scan		
Toggle Blue Mode	Blue			
Toggle Orange Mode	Orange			
Toggle Shift Mode	Shft			
Alt	Alt			
Control	Ctl			
Esc	Blue	Alt		
Space	Spc			
Enter	Enter			
Scan	Scan			
CapsLock (Toggle)	Blue	Tab		
Back Space	Orange	Spc		

To get this Key / Function	Press these Keys in this Order			
Tab	Tab			
Back Tab	Orange	Tab		
Up Arrow	Up Arrow			
Down Arrow	Down Arrow			
Right Arrow	Right Arrow			
Left Arrow	Left Arrow			
Insert	Blue	I (letter i)		
Insert	Orange	Ctl		
Delete	Del			
Home	Shft	Down Arrow		
End	Shft	Up Arrow		
Page Up	Orange	Up Arrow		
Page Down	Orange	Down Arrow		
F1	F1			
F2	F2			
F3	F3			
F4	F4			
F5	F5			
F6	Orange	F1		
F7	Orange	F2		
F8	Orange	F3		
F9	Orange	F4		
F10	Orange	F5		
F11	Blue	F1		
F12	Blue	F2		
F13	Blue	F3		
F14	Blue	F4		
F15	Blue	F5		
F16	Shft	F1		
F17	Shft	F2		
F18	Shft	F3		
F19	Shft	F4		
F20	Shft	F5		
F21	Shft	Orange	F1	

To get this Key / Function	Press these Keys in this Order			
F22	Shft	Orange	F2	
F23	Shft	Orange	F3	
F24	Shft	Orange	F4	
a	A			
b	B			
c	C			
d	D			
e	E			
f	F			
g	G			
h	H			
i	I			
j	J			
k	K			
l	L			
m	M			
n	N			
o	O			
p	P			
q	Q			
r	R			
s	S			
t	T			
u	U			
v	V			
w	W			
x	X			
y	Y			
z	Z			
A	Shft	A		
B	Shft	B		
C	Shft	C		
D	Shft	D		
E	Shft	E		

To get this Key / Function	Press these Keys in this Order			
F	Shft	F		
G	Shft	G		
H	Shft	H		
I	Shft	I		
J	Shft	J		
K	Shft	K		
L	Shft	L		
M	Shft	M		
N	Shft	N		
O	Shft	O		
P	Shft	P		
Q	Shft	Q		
R	Shft	R		
S	Shft	S		
T	Shft	T		
U	Shft	U		
V	Shft	V		
W	Shft	W		
X	Shft	X		
Y	Shft	Y		
Z	Shft	Z		
1	1			
2	2			
3	3			
4	4			
5	5			
6	6			
7	7			
8	8			
9	9			
0	0			
. (period)	Orange	DEL		
. (period	Orange	K		
<	Blue	G		

To get this Key / Function	Press these Keys in this Order			
[	Blue	Y		
]	Blue	Z		
>	Blue	H		
=	Blue	T		
{	Blue	W		
}	Blue	X		
/	Blue	J		
-	Blue	Spc		
+	Blue	Del		
* (asterisk)	Orange	I (letter i)		
* (asterisk)	Shft	8		
: (colon)	Orange	D		
; (semicolon)	Orange	F		
?	Orange	L		
` (accent)	Orange	N		
_ (underscore)	Orange	M		
, (comma)	Orange	J		
' (apostrophe)	Orange	H		
~ (tilde)	Orange	B		
\	Orange	S		
|	Orange	A		
"	Orange	G		
!	Orange	Q		
!	Shft	1		
@	Orange	W		
@	Shft	2		
#	Orange	E		
#	Shft	3		
$	Orange	R		
$	Shft	4		
€	Blue	R		
%	Orange	T		
%	Shft	5		
^	Orange	Y		

To get this Key / Function	Press these Keys in this Order			
^	Shft	6		
&	Orange	U		
&	Shft	7		
(	Orange	O		
(	Shft	9		
)	Orange	P		
)	Shft	0 (zero)		

55 Key 5250 Alphanumeric KeyMap - Primary Delete

- The following keymap is used on an MX7 Tecton that is running a 5250 Terminal Emulator.
- When using a sequence of keys that includes a sticky key, press the sticky key first, release it, then press the rest of the key sequence.
- When using a sequence of keys that includes the Orange or Blue keys, press the color key first then the rest of the key sequence.
- Tapping the Power key when in any sticky mode (Blue, Orange, Shift, etc.) either turns the device On (when Off) or places it in Suspend (when On).
- Alphabetic keys default to lower case letters. Press the Shft key, then the alphabetic key for an uppercase letter.
- When the computer boots, the default condition of Caps (or CapsLock) is Off. The Caps (or CapsLock) condition can be toggled with Blue plus Tab key sequence.
- For those keymaps that require remapping (MAP), keys can be remapped using the Buttons Panel (Start | Settings | Personal | Buttons).

To get this 5250 Key / Function	Press these Keys in this Order			
Attn (Attention)	Ctl	A		
Clr (Clear)	Ctl	C		
Del (Delete)	Ctl	D		
Dup (Duplicate)	Ctl	U		
E-Inp (Erase Input)	Ctl	Q		
Field Exit (Enter)	Diamond 1			
Fld - (Field Minus)	Ctl	M		
Fld + (Field Plus)	Ctl	L		
Ins (Insert)	Ctl	I		
NL (New Line)	Ctl	N		
SysReq (System)	Ctl	S		
The following are ANSI keymaps				
Power / Suspend	Power			
Field Exit (default VK_PAUSE) MAP = Mappable	Blue (MAP)	Orange (MAP)	Shift (MAP)	Diamond #1
Volume Adjust Mode	Orange	Scan	Up Arrow / Down Arrow	
Volume Adjust Mode	Blue	V	Up Arrow / Down Arrow	
Display Backlight Brightness Adjust Mode	Blue	Scan		
Toggle Blue Mode	Blue			
Toggle Orange Mode	Orange			
Toggle Shift Mode	Shft			
Alt	Alt			
Control	Ctl			
Esc	Blue	Alt		

To get this 5250 Key / Function	Press these Keys in this Order			
Space	Spc			
Enter	Enter			
Scan	Scan			
CapsLock (Toggle)	Blue	Tab		
Back Space	Orange	Spc		
Tab	Tab			
Back Tab	Orange	Tab		
Up Arrow	Up Arrow			
Down Arrow	Down Arrow			
Right Arrow	Right Arrow			
Left Arrow	Left Arrow			
Insert	Blue	I (letter i)		
Insert	Orange	Ctl		
Delete	Del			
Home	Shft	Down Arrow		
End	Shft	Up Arrow		
Page Up	Orange	Up Arrow		
Page Down	Orange	Down Arrow		
F1	F1			
F2	F2			
F3	F3			
F4	F4			
F5	F5			
F6	Orange	F1		
F7	Orange	F2		
F8	Orange	F3		
F9	Orange	F4		
F10	Orange	F5		
F11	Blue	F1		
F12	Blue	F2		
F13	Blue	F3		
F14	Blue	F4		
F15	Blue	F5		
F16	Shft	F1		

To get this 5250 Key / Function	Press these Keys in this Order			
F17	Shft	F2		
F18	Shft	F3		
F19	Shft	F4		
F20	Shft	F5		
F21	Shft	Orange	F1	
F22	Shft	Orange	F2	
F23	Shft	Orange	F3	
F24	Shft	Orange	F4	
a	A			
b	B			
c	C			
d	D			
e	E			
f	F			
g	G			
h	H			
i	I			
j	J			
k	K			
l	L			
m	M			
n	N			
o	O			
p	P			
q	Q			
r	R			
s	S			
t	T			
u	U			
v	V			
w	W			
x	X			
y	Y			
z	Z			

To get this 5250 Key / Function	Press these Keys in this Order			
A	Shft	A		
B	Shft	B		
C	Shft	C		
D	Shft	D		
E	Shft	E		
F	Shft	F		
G	Shft	G		
H	Shft	H		
I	Shft	I		
J	Shft	J		
K	Shft	K		
L	Shft	L		
M	Shft	M		
N	Shft	N		
O	Shft	O		
P	Shft	P		
Q	Shft	Q		
R	Shft	R		
S	Shft	S		
T	Shft	T		
U	Shft	U		
V	Shft	V		
W	Shft	W		
X	Shft	X		
Y	Shft	Y		
Z	Shft	Z		
1	1			
2	2			
3	3			
4	4			
5	5			
6	6			
7	7			
8	8			

To get this 5250 Key / Function	Press these Keys in this Order			
9	9			
0	0			
. (period)	Orange	DEL		
. (period	Orange	K		
<	Blue	G		
[	Blue	Y		
]	Blue	Z		
>	Blue	H		
=	Blue	T		
{	Blue	W		
}	Blue	X		
/	Blue	J		
-	Blue	Spc		
+	Blue	Del		
* (asterisk)	Orange	I (letter i)		
* (asterisk)	Shft	8		
: (colon)	Orange	D		
; (semicolon)	Orange	F		
?	Orange	L		
` (accent)	Orange	N		
_ (underscore)	Orange	M		
, (comma)	Orange	J		
' (apostrophe)	Orange	H		
~ (tilde)	Orange	B		
\	Orange	S		
|	Orange	A		
"	Orange	G		
!	Orange	Q		
!	Shft	1		
@	Orange	W		
@	Shft	2		
#	Orange	E		
#	Shft	3		
$	Orange	R		

To get this 5250 Key / Function	Press these Keys in this Order			
$	Shft	4		
€	Blue	R		
%	Orange	T		
%	Shft	5		
^	Orange	Y		
^	Shft	6		
&	Orange	U		
&	Shft	7		
(	Orange	O		
(	Shft	9		
)	Orange	P		
)	Shft	0 (zero)		

55 key Alphanumeric Keymap - Primary Backspace

Note: This keypad features a dedicated backspace key.

- The following keymap is used on an MX7 Tecton that is NOT running an LXE Terminal Emulator. LXE terminal emulators use a separate keymap.
- When using a sequence of keys that includes a sticky key, press the sticky key first, release it, then press the rest of the key sequence.
- When using a sequence of keys that includes the Orange or Blue keys, press the color key first then the rest of the key sequence.
- Tapping the Power key when in any sticky mode (Blue, Orange, Shift, etc.) either turns the device On (when Off) or places it in Suspend (when On).
- Alphabetic keys default to lower case letters. Press the Shft key, then the alphabetic key for an uppercase letter.
- When the computer boots, the default condition of Caps (or CapsLock) is Off. The Caps (or CapsLock) condition can be toggled with Blue plus Tab key sequence.
- For those keymaps that require remapping (MAP), keys can be remapped using the Buttons Panel (Start | Settings | Personal | Buttons).

To get this Key / Function	Press these Keys in this Order			
Power / Suspend	Power			
Field Exit (default VK_PAUSE) MAP = Mappable	Blue (MAP)	Orange (MAP)	Shift (MAP)	Diamond #1
Volume Adjust Mode	Orange	Scan	Up Arrow / Down Arrow	
Volume Adjust Mode	Blue	V	Up Arrow / Down Arrow	
Display Backlight Brightness Adjust Mode	Blue	Scan		
Toggle Blue Mode	Blue			
Toggle Orange Mode	Orange			
Toggle Shift Mode	Shft			
Alt	Alt			
Control	Ctl			
Esc	Blue	Alt		
Space	Spc			
Enter	Enter			
Scan	Scan			
CapsLock (Toggle)	Blue	Tab		
Back Space	Bksp			
Tab	Tab			
Back Tab	Orange	Tab		
Up Arrow	Up Arrow			
Down Arrow	Down Arrow			
Right Arrow	Right Arrow			

To get this Key / Function	Press these Keys in this Order			
Left Arrow	Left Arrow			
Insert	Blue	I (letter i)		
Insert	Orange	Ctl		
Delete	Orange	Spc		
Home	Shft	Down Arrow		
End	Shft	Up Arrow		
Page Up	Orange	Up Arrow		
Page Down	Orange	Down Arrow		
F1	F1			
F2	F2			
F3	F3			
F4	F4			
F5	F5			
F6	Orange	F1		
F7	Orange	F2		
F8	Orange	F3		
F9	Orange	F4		
F10	Orange	F5		
F11	Blue	F1		
F12	Blue	F2		
F13	Blue	F3		
F14	Blue	F4		
F15	Blue	F5		
F16	Shft	F1		
F17	Shft	F2		
F18	Shft	F3		
F19	Shft	F4		
F20	Shft	F5		
F21	Shft	Orange	F1	
F22	Shft	Orange	F2	
F23	Shft	Orange	F3	
F24	Shft	Orange	F4	
a	A			
b	B			

To get this Key / Function	Press these Keys in this Order			
c	C			
d	D			
e	E			
f	F			
g	G			
h	H			
i	I			
j	J			
k	K			
l	L			
m	M			
n	N			
o	O			
p	P			
q	Q			
r	R			
s	S			
t	T			
u	U			
v	V			
w	W			
x	X			
y	Y			
z	Z			
A	Shft	A		
B	Shft	B		
C	Shft	C		
D	Shft	D		
E	Shft	E		
F	Shft	F		
G	Shft	G		
H	Shft	H		
I	Shft	I		
J	Shft	J		

To get this Key / Function	Press these Keys in this Order			
K	Shft	K		
L	Shft	L		
M	Shft	M		
N	Shft	N		
O	Shft	O		
P	Shft	P		
Q	Shft	Q		
R	Shft	R		
S	Shft	S		
T	Shft	T		
U	Shft	U		
V	Shft	V		
W	Shft	W		
X	Shft	X		
Y	Shft	Y		
Z	Shft	Z		
1	1			
2	2			
3	3			
4	4			
5	5			
6	6			
7	7			
8	8			
9	9			
0	0			
. (period)	Orange	Bksp		
. (period	Orange	K		
<	Blue	G		
[	Blue	Y		
]	Blue	Z		
>	Blue	H		
=	Blue	T		
{	Blue	W		

To get this Key / Function	Press these Keys in this Order			
}	Blue	X		
/	Blue	J		
-	Blue	Spc		
+	Blue	Bksp		
* (asterisk)	Orange	I (letter i)		
* (asterisk)	Shft	8		
: (colon)	Orange	D		
; (semicolon)	Orange	F		
?	Orange	L		
` (accent)	Orange	N		
_ (underscore)	Orange	M		
, (comma)	Orange	J		
' (apostrophe)	Orange	H		
~ (tilde)	Orange	B		
\	Orange	S		
|	Orange	A		
"	Orange	G		
!	Orange	Q		
!	Shft	1		
@	Orange	W		
@	Shft	2		
#	Orange	E		
#	Shft	3		
$	Orange	R		
$	Shft	4		
€	Blue	R		
%	Orange	T		
%	Shft	5		
^	Orange	Y		
^	Shft	6		
&	Orange	U		
&	Shft	7		
(	Orange	O		
(	Shft	9		

To get this Key / Function	Press these Keys in this Order			
)	Orange	P		
)	Shft	0 (zero)		

32 key Numeric-Alpha Keymap

- The following keymap is used on an MX7 Tecton that is NOT running an LXE Terminal Emulator. LXE terminal emulators use a separate keymap.
- When using a sequence of keys that require an alpha key, first press the Alph key. Use the Shft sticky key or the Caps key sequence (Blue+Tab) for upper case alphabetic characters.
- Pressing the Alph key forces “Alpha” mode for the 2,3,4,5,6,7,8, and 9 keys. The 1 and 0 keys continue to place a 1 and 0 into the text field.
- To create a combination of numbers and letters before pressing Enter, remember to tap the Alph key to toggle between Alpha and Numeric mode.
- When using a sequence of keys that do not include the Alph key but does include a sticky key, press the sticky key first then the rest of the key sequence.
- Pressing the Power key when in any sticky mode (Blue, Orange, Shift, etc) either turns the device On (when Off) or places it in Suspend (when On).
- For those keymaps that require remapping (MAP), keys can be remapped using the Buttons Panel (Start | Settings | Personal | Buttons).

To get this Key / Function	Press these Keys in this Order		
Power / Suspend	Power		
Field Exit (default is VK_PAUSE) MAP = Mappable	Blue (MAP)	Shft (MAP)	Diamond #1
=	Orange	Shft (MAP)	Diamond#2 Default is Mappable
(	Blue	Shft (MAP)	Diamond#2 Default is Mappable
!	Orange	Shft (MAP)	Diamond#3 Default is Mappable
)	Blue	Shft (MAP)	Diamond#3 Default is Mappable
Volume Adjust Mode	Orange	Scan	Up Arrow Down Arrow
Display Backlight Brightness Adjust Mode	Blue	Scan	Up Arrow Down Arrow
Toggle Alpha Mode	Alph		
Toggle Blue Mode	Blue		
Toggle Orange Mode	Orange		
Toggle Shift Mode	Shft		
Alt Mode	Alt		
Control Mode	Ctrl		
Esc	Blue	Alt	
Space	Spc		
Enter	Enter		

To get this Key / Function	Press these Keys in this Order		
Scan Mode	Scan		
CapsLock (Toggle)	Blue	Tab	
Back Space	Orange	Spc	
Tab	Tab		
Back Tab	Orange	Tab	
Up Arrow	Up Arrow		
Down Arrow	Down Arrow		
Right Arrow	Blue	Up Arrow	
Left Arrow	Blue	Down Arrow	
Insert	Orange	Ctrl	
Delete	Del		
Home	Shft	Down Arrow	
End	Shft	Up Arrow	
Page Up	Orange	Up Arrow	
Page Down	Orange	Down Arrow	
F1	F1		
F2	F2		
F3	F3		
F4	F4		
F5	F5		
F6	Orange	F1	
F7	Orange	F2	
F8	Orange	F3	
F9	Orange	F4	
F10	Orange	F5	
F11	Blue	F1	
F12	Blue	F2	
F13	Blue	F3	
F14	Blue	F4	
F15	Blue	F5	
F16	Shft	F1	
F17	Shft	F2	
F18	Shft	F3	
F19	Shft	F4	

To get this Key / Function	Press these Keys in this Order		
F20	Shft	F5	
F21	Shft	Orange	F1
F22	Shft	Orange	F2
F23	Shft	Orange	F3
F24	Shft	Orange	F4
a	Alpha	2	
b	Alpha	22	
c	Alpha	222	
d	Alpha	3	
e	Alpha	33	
f	Alpha	333	
g	Alpha	4	
h	Alpha	44	
i	Alpha	444	
j	Alpha	5	
k	Alpha	55	
l	Alpha	555	
m	Alpha	6	
n	Alpha	66	
o	Alpha	666	
p	Alpha	7	
q	Alpha	77	
r	Alpha	777	
s	Alpha	7777	
t	Alpha	8	
u	Alpha	88	
v	Alpha	888	
w	Alpha	9	
x	Alpha	99	
y	Alpha	999	
z	Alpha	9999	
A	Shft	Alpha	2
B	Shft	Alpha	22
C	Shft	Alpha	222

To get this Key / Function	Press these Keys in this Order		
D	Shft	Alpha	3
E	Shft	Alpha	33
F	Shft	Alpha	333
G	Shft	Alpha	4
H	Shft	Alpha	44
I	Shft	Alpha	444
J	Shft	Alpha	5
K	Shft	Alpha	55
L	Shft	Alpha	555
M	Shft	Alpha	6
N	Shft	Alpha	66
O	Shft	Alpha	666
P	Shft	Alpha	7
Q	Shft	Alpha	77
R	Shft	Alpha	777
S	Shft	Alpha	7777
T	Shft	Alpha	8
U	Shft	Alpha	88
V	Shft	Alpha	888
W	Shft	Alpha	9
X	Shft	Alpha	99
Y	Shft	Alpha	999
Z	Shft	Alpha	9999
1	1		
2	2		
3	3		
4	4		
5	5		
6	6		
7	7		
8	8		
9	9		
0	0		
. (period)	Orange	DEL	

To get this Key / Function	Press these Keys in this Order		
<	Blue	7	
[	Blue	2	
[	Orange	2	
]	Blue	3	
]	Orange	3	
>	Blue	8	
=	Orange	Diamond#2	
{	Blue	4	
}	Blue	5	
/	Blue	1	
-	Blue	Spc	
+	Blue	Del	
* (asterisk)	Orange	Diamond#1	
* (asterisk)	Shft	8	
: (colon)	Orange	0	
; (semicolon)	Blue	0	
?	Orange	8	
` (accent)	Blue	6	
_ (underscore)	Orange	7	
, (comma)	Orange	6	
' (apostrophe)	Orange	Alph	
~ (tilde)	Blue	9	
\	Orange	1	
|	Orange	Alt	
"	Blue	Alph	
!	Orange	Diamond#3	
!	Shft	1	
@	Orange	5	
@	Shft	2	
#	Orange	4	
#	Shft	3	
$	Orange	9	
$	Shft	4	
%	Shft	5	

To get this Key / Function	Press these Keys in this Order		
^	Blue	Ctrl	
^	Shft	6	
&	Shft	7	
(	Blue	Diamond#2	
(	Shft	9	
)	Blue	Diamond#3	
)	Shft	0 (zero)	

Technical Specifications

MX7 Tecton

Processor	Xscale PXA320 CPU operating at 806 MHz. Turbo mode switching is supported. 32 bit CPU (with on-chip cache)
Memory	DRAM: 256 MB DDRAM | 256MB NAND Flash
Mass Storage	One SD Memory card slot for Expansion Memory : Options: 1GB, 4GB
Operating System	Microsoft® Windows® Mobile® 6.5
Radio Modules	802.11 a/b/g radio / Bluetooth
Scanner options	Integrated. No Scanner | Symbol SE1524ER Lorax | Symbol SE955 (SE955I, SE955E) Low Power and Short Range | HHP5300 2D Imager
Display	Transmissive Color LCD. Touchscreen. Customer Configurable Display. Backlighting. Indoor readable. Type - LCD – Active Transmissive Color / LED Backlight Resolution - 320 (Vertical) x 240 (Horizontal) pixels Size - 1/4 VGA portrait Diagonal Viewing Area - 3.5 in (8.9cm) Dot Pitch - 0.22mm Dot Size - 0.20mm x 0.20mm Color Scale - Reflective – 256 colors
External Connectors / Interface	RS-232 COM1 mini D serial port. 20 Position “D” (female) Connector. Provides cabled connection to external devices such as an audio headset, printer, USB/power connection, RS-232/power connection.
Main Battery	Standard: Li-Ion battery pack 7.4V 2200mAh.In-Unit and External Re-Chargeable Cold Storage: Li-Ion battery pack 7.4V 1250mAh.In-Unit and External Re-Chargeable
Backup Power	2.5V Super-capacitor (Super-cap). No backup "battery" is used.

Dimensions and Weight

Dimension	
Length	8.8” | 22.3 cm
Width at Display Width at handgrip	3.4” | 8.6 cm 2.8” | 7.1 cm
Depth at Scanner Depth at Battery	2” | 5.1 cm 1.7” | 4.3 cm
Weight	
Unit with network card, battery, SE1524ER scanner and handle	1.6 lbs (26.1 oz) | 740g
Unit with network card, battery, SE1524ER scanner and handstrap	1.4 lbs (22.6 oz) | 640g
Battery	4.3 oz | 122g
Handle	4 oz | 110g
Network Card	0.35 oz | 9.9g
SD Flash Card	1 oz | 28g

Environmental Specifications

Operating Temperature	14°F to 122°F (-10°C to 50°C)
Storage Temperature	-4°F to 158°F (-20°C to 70°C)
ESD	8 KV air, 4kV direct contact
Freezer Operating Temperature	-30°C to 60°C
Operating Humidity	Up to 90% non-condensing at 104°F (40°C)
Water and Dust	IEC 60529 compliant to IP65
Vibration	Based on MIL Std 810D

Network Card Specifications

Summit 802.11 a/b/g SDIO 2.4/5.0GHz

Wireless Frequencies	2.4 to 2.4897 GHz IEEE 802.11b / 802.11g DSSS OFDM 5.0GHz IEEE 802.11a DSSS OFDM
RF Data Rates	1, 2, 5.5, 6, 9, 11, 12, 18, 24, 36, 48, 54 Mbps
RF Power Level	64 mW (18dBm)
Channels	FCC: 1-11, 36, 40 ,44, 48, 149, 153, 157, 161 ETSI: 1-13, 36, 40, 44 ,48
Operating Temperature	Same as MX7 Tecton Operating Temperature
Storage Temperature	Same as MX7 Tecton Storage Temperature
Connectivity	TCP/IP, Ethernet, ODI
Diversity	Yes

Bluetooth

Connection	No more than 32.80 feet (10 meters) line of sight
Operating Frequency	2.402 – 2.480 GHz
Bluetooth Version	2.1 + EDR

AC Wall Adapter

Input Power Switch	None
Power "ON" Indicator	None
Input Fusing	Thermal Fuse
Input Voltage	100VAC min – 240 VAC max
Input Frequency	50 - 60 Hz
Input Connector	North American wall plug, no ground
Output Connector	AC wall adapter has a 5.5mm barrel connector. This connects to the LXE cables which transition power to the 20 pin D connector.
Output Voltage	+12V, regulated
Output Current	0 Amps min, 1.25 Amps max
Operating Temperature	32 F to 100° F / -0° C to 40° C The LXE-approved AC Power Adapter is only intended for use in a 25°C (77°F) maximum ambient temperature environment.
Storage Temperature	-40° F to 180° F / -40° C to 80° C
Humidity	Operates in a relative humidity of 5 – 95% (non-condensing)

Hat Encoding

Hat Encoded Characters Hex 00 through AD

Desired ASCII	Hex Value	Hat Encoded
NUL	0X00	^@
SOH	0X01	^A
STX	0X02	^B
ETX	0X03	^C
EOT	0X04	^D
ENQ	0X05	^E
ACK	0X06	^F
BEL	0X07	^G
BS	0X08	^H
HT	0X09	^I
LF	0X0A	^J
VT	0X0B	^K
FF	0X0C	^L
CR	0X0D	^M
SO	0X0E	^N
SI	0X0F	^O
DLE	0X10	^P
DC1 (XON)	0X11	^Q
DC2	0X12	^R
DC3 (XOFF)	0X13	^S
DC4	0X14	^T
NAK	0X15	^U
SYN	0X16	^V
ETB	0X17	^W
CAN	0X18	^X
EM	0X19	^Y
SUB	0X1A	^Z
ESC	0X1B	^[
FS	0X1C	^\\
GS	0X1D	^]
RS	0X1E	^^
US	0X1F	^ (Underscore)
	0X7F	^?
	80	~^@
	81	~^A
	82	~^B
	83	~^C
IND	84	~^D
NEL	85	~^E
SSA	86	~^F
®	AE	~. (Period)
¯	AF	~/
°	B0	~0 (Zero)
±	B1	~1

Desired ASCII	Hex Value	Hat Encoded
ESA	87	~^G
HTS	88	~^H
HTJ	89	~^I
VTS	8A	~^J
PLD	8B	~^K
PLU	8C	~^L
RI	8D	~^M
SS2	8E	~^N
SS3	8F	~^O
DCS	90	~^P
PU1	91	~^Q
PU2	92	~^R
STS	93	~^S
CCH	94	~^T
MW	95	~^U
SPA	96	~^V
EPA	97	~^W
	98	~^X
	99	~^Y
	9A	~^Z
CSI	9B	~^[
ST	9C	~^\\
OSC	9D	~^]
PM	9E	~^^
APC	9F	~^_ (Underscore)
(no-break space)	A0	~ (Tilde and Space)
¡	A1	~!
¢	A2	~"
£	A3	~#
¤	A4	~$
¥	A5	~%
¦	A6	~&
§	A7	~'
¨	A8	~(
©	A9	~)
ª	AA	~*
«	AB	~+
¬	AC	~,
(soft hyphen)	AD	~- (Dash)
×	D7	~W
Ø	D8	~X
Ù	D9	~Y
Ú	DA	~Z

Hat Encoded Characters Hex AE through FF

Desired ASCII	Hex Value	Hat Encoded
²	B2	~2
³	B3	~3
´	B4	~4
µ	B5	~5
¶	B6	~6
·	B7	~7
¸	B8	~8
¹	B9	~9
º	BA	~:
»	BB	~;
¼	BC	~<
½	BD	~=
¾	BE	~>
¿	BF	~?
À	C0	~@
Á	C1	~A
Â	C2	~B
Ã	C3	~C
Ä	C4	~D
Å	C5	~E
Æ	C6	~F
Ç	C7	~G
È	C8	~H
É	C9	~I
Ê	CA	~J
Ë	CB	~K
Ì	CC	~L
Í	CD	~M
Î	CE	~N
Ï	CF	~O
Ð	D0	~P
Ñ	D1	~Q
Ò	D2	~R
Ó	D3	~S
Ô	D4	~T
Õ	D5	~U
Ö	D6	~V

Desired ASCII	Hex Value	Hat Encoded
Û	DB	~[
Ü	DC	~\\
Ý	DD	~]
Þ	DE	~\^
ß	DF	~_ (Underscore)
à	E0	~`
á	E1	~a
â	E2	~b
ã	E3	~c
ä	E4	~d
å	E5	~e
æ	E6	~f
ç	E7	~g
è	E8	~h
é	E9	~i
ê	EA	~j
ë	EB	~k
ì	EC	~l
í	ED	~m
î	EE	~n
ï	EF	~o
ð	F0	~p
ñ	F1	~q
ò	F2	~r
ó	F3	~s
ô	F4	~t
õ	F5	~u
ö	F6	~v
÷	F7	~w
ø	F8	~x
ù	F9	~y
ú	FA	~z
û	FB	~{
ü	FC	~|
ý	FD	~}
þ	FE	~~
ÿ	FF	~^?

AppLock Error Messages

Any messages whose first word is an 'ing' word is output prior to the action described in the message. For example, "Switching to admin-hotkey press" is logged after the administrator has pressed the hotkey but prior to starting the switch process.

For all operations that can result in an error, an Error level message is displayed when a failure occurs. These messages contain the word "failure". These messages have a partner Extended level message that is logged which contains the word "OK" if the action completed successfully rather than with an error.

For processing level messages, "Enter…" is logged at the beginning of the function specified in the message and "Exit…" is logged at the end (just before the return) of the function specified in the message.

Message	Explanation and/or corrective action	Level
Error reading hotkey	The hotkey is read but not required by AppLock.	LOG_EX
Error reading hotkey; using default	A hotkey is required. If there is a failure reading the hotkey, the internal factory default is used.	LOG_ERROR
App Command Line= <Command line>	Command line of the application being locked	LOG_ PROCESSING
App= <Application name>	Name of the application being locked	LOG_ PROCESSING
dwProcessID= <#>	Device ID of the application being locked	LOG_EX
Encrypt exported key len <#>	Size of encrypt export key	LOG_EX
Encrypt password length= <#>	The length of the encrypted password.	LOG_EX
Encrypted data len <#>	Length of the encrypted password	LOG_EX
hProcess= <#>	Handle of the application being locked	LOG_EX
Key pressed = <#>	A key has been pressed and trapped by the hotkey processing.	LOG_EX
**********	The status information is being saved to a file and the file has been opened successfully.	LOG_EX
Address of keyboard hook procedure failure	AppLock found the kbdhook.dll, but was unable to get the address of the initialization procedure. For some reason the dll is corrupted. Look in the \Windows directory for kbdhook.dll. If it exists, delete it. Also delete AppLock.exe from the \Windows directory and reboot the unit. Deleting AppLock.exe triggers the AppLock system to reload.	LOG_ERROR
Address of keyboard hook procedure OK	AppLock successfully retrieved the address of the keyboard filter initialization procedure.	LOG_EX
Alt pressed	The Alt key has been pressed and trapped by the HotKey processing.	LOG_EX
Alt	Processing the hotkey and backdoor entry	LOG_EX
Application handle search failure	The application being locked did not complete initialization.	LOG_ERROR
Application handle search OK	The application initialized itself successfully	LOG_ERROR
Application load failure	The application could not be launched by AppLock; the application could not be found or is corrupted.	LOG_ERROR
Backdoor message received	The backdoor keys have been pressed. The backdoor hotkeys provide a method for customer service to get a user back into their system without editing the registry or reloading the device.	LOG_ PROCESSING
Cannot find kbdhook.dll	The load of the keyboard filter failed. This occurs when the dll is missing or is corrupted. Look in the \Windows directory for kbdhook.dll. If it exists, delete it. Also delete	LOG_ERROR

Message	Explanation and/or corrective action	Level
	AppLock.exe from the \Windows directory and reboot the unit. Deleting AppLock.exe triggers the AppLock system to reload.	
Converted Pwd	Converted password from wide to mbs.	LOG_EX
Could not create event EVT_HOTKEYCHG	The keyboard filter uses this event at the Administrator panel. The event could not be created.	LOG_ERROR
Could not hook keyboard	If the keyboard cannot be controlled, AppLock cannot process the hotkey. This failure prevents a mode switch into user mode.	LOG_ERROR
Could not start thread HotKeyMon	The keyboard filter must watch for hot key changes. The watch process could not be initiated.	LOG_ERROR
Ctrl after L or X	Processing the backdoor entry.	LOG_EX
Ctrl pressed	The Ctrl key has been pressed and trapped by the HotKey processing.	LOG_EX
Ctrl	Processing the hotkey and backdoor entry.	LOG_EX
Decrypt acquire context failure	Unable to decrypt password.	LOG_ERROR
Decrypt acquired context OK	Decryption process ok.	LOG_EX
Decrypt create hash failure	Unable to decrypt password.	LOG_ERROR
Decrypt created hash OK	Decryption process ok.	LOG_EX
Decrypt failure	Unable to decrypt password.	LOG_ERROR
Decrypt import key failure	Unable to decrypt password.	LOG_ERROR
Decrypt imported key OK	Decryption process ok.	LOG_EX
Encrypt acquire context failure	Unable to encrypt password.	LOG_ERROR
Encrypt acquire encrypt context failure	Unable to encrypt password.	LOG_ERROR
Encrypt acquired encrypt context OK	Encrypt password process successful.	LOG_EX
Encrypt create hash failure	Unable to encrypt password.	LOG_ERROR
Encrypt create key failure	Unable to encrypt password.	LOG_ERROR
Encrypt created encrypt hash OK	Encrypt password process successful.	LOG_EX
Encrypt export key failure	Unable to encrypt password.	LOG_ERROR
Encrypt export key length failure	Unable to encrypt password.	LOG_ERROR
Encrypt exported key OK	Encrypt password process successful.	LOG_EX
Encrypt failure	The password encryption failed.	LOG_ERROR
Encrypt gen key failure	Unable to encrypt password.	LOG_ERROR
Encrypt generate key failure	Unable to encrypt password.	LOG_ERROR
Encrypt get user key	Unable to encrypt password.	LOG_ERROR

Message	Explanation and/or corrective action	Level
failure		
Encrypt get user key ok	Encrypt password process successful.	LOG_EX
Encrypt hash data failure	Unable to encrypt password.	LOG_ERROR
Encrypt hash data from pwd OK	Encrypt password process successful.	LOG_EX
Encrypt length failure	Unable to encrypt password.	LOG_ERROR
Encrypt out of memory for key	Unable to encrypt password.	LOG_ERROR
Encrypted data OK	The password has been successfully encrypted.	LOG_EX
Enter AppLockEnumWindows	In order for AppLock to control the application being locked so it can prevent the application from exiting, AppLock launches the application and has to wait until it has created and initialized its main window. This message is logged when the function that waits for the application initialization is entered.	LOG_EX
Enter DecryptPwd	Entering the password decryption process.	LOG_ PROCESSING
Enter EncryptPwd	Entering the password encryption processing.	LOG_ PROCESSING
Enter FullScreenMode	Entering the function that switches the screen mode. In full screen mode, the taskbar is hidden and disabled.	LOG_ PROCESSING
Enter GetAppInfo	Processing is at the beginning of the function that retrieves the application information from the registry.	LOG_ PROCESSING
Enter password dialog	Entering the password dialog processing.	LOG_ PROCESSING
Enter password timeout	Entering the password timeout processing.	LOG_ PROCESSING
Enter restart app timer	Some application shut down before AppLock can stop it. In these cases, AppLock gets notification of the exit. When the notification is received, AppLock starts a timer to restart the application. This message logs that the timer has expired and the processing is at the beginning of the timer function.	LOG_ PROCESSING
Enter TaskbarScreenMode	Entering the function that switches the screen to non-full screen mode and enable the taskbar.	LOG_ PROCESSING
Enter ToAdmin	Entering the function that handles a mode switch into admin mode.	LOG_ PROCESSING
Enter ToUser	Entering the function that handles the mode switch to user mode	LOG_ PROCESSING
Enter verify password	Entering the password verification processing.	LOG_ PROCESSING
Exit AppLockEnumWindows-Found	There are two exit paths from the enumeration function. This message denotes the enumeration function found the application.	LOG_ PROCESSING
Exit AppLockEnumWindows-Not found	There are two exit paths from the enumeration function. This message denotes the enumeration function did not find the application.	LOG_ PROCESSING
Exit DecryptPwd	Exiting password decryption processing.	LOG_ PROCESSING

Message	Explanation and/or corrective action	Level
Exit EncryptPwd	Exiting password encryption processing.	LOG_ PROCESSING
Exit FullScreenMode	Exiting the function that switches the screen to full screen.	LOG_ PROCESSING
Exit GetAppInfo	Processing is at the end of the function that retrieved the application information from the registry.	LOG_ PROCESSING
Exit password dialog	Exiting password prompt processing.	LOG_ PROCESSING
Exit password dialog-cancel	Exiting password prompt w/cancel.	LOG_ PROCESSING
Exit password dialog-OK	Exiting password prompt successfully.	LOG_ PROCESSING
Exit password timeout	Exiting password timeout processing.	LOG_ PROCESSING
Exit restart app timer	Processing is at the end of the timer function	LOG_ PROCESSING
Exit TaskbarScreenMode	Exiting the function that switches the screen mode back to normal operation for the administrator.	LOG_ PROCESSING
Exit ToAdmin	Exiting the function that handles the mode switch into admin mode.	LOG_ PROCESSING
Exit ToUser	Exiting the user mode switch function.	LOG_ PROCESSING
Exit ToUser-Registry read failure	The AppName value does not exist in the registry so user mode cannot be entered.	LOG_ PROCESSING
Exit verify password-no pwd set	Exiting password verification.	LOG_ PROCESSING
Exit verify password-response from dialog	Exiting password verification.	LOG_ PROCESSING
Found taskbar	The handle to the taskbar has been found so that AppLock can disable it in user mode.	LOG_ PROCESSING
Getting address of keyboard hook init procedure	AppLock is retrieving the address of the keyboard hook.	LOG_ PROCESSING
Getting configuration from registry	The AppLock configuration is being read from the registry. This occurs at initialization and also at entry into user mode. The registry must be re-read at entry into user mode in case the administration changed the settings of the application being controlled.	LOG_ PROCESSING
Getting encrypt pwd length	The length of the encrypted password is being calculated.	LOG_EX
Hook wndproc failure	AppLock is unable to lock the application. This could happen if the application being locked encountered an error after performing its initialization and shut itself down prior to being locked by AppLock.	LOG_ERROR
Hook wndproc of open app failure	The application is open, but AppLock cannot lock it.	LOG_ERROR
Hot key event creation failure	The Admin applet is unable to create the hotkey notification.	LOG_ERROR

Message	Explanation and/or corrective action	Level
Hot key pressed	Processing the hotkey and backdoor entry	LOG_EX
Hot key pressed	Processing the hotkey and backdoor entry	LOG_EX
Hot key set event failure	When the administrator changes the hotkey configuration the hotkey controller must be notified. This notification failed.	LOG_ERROR
Hotkey press message received	The user just pressed the configured hotkey.	LOG_ PROCESSING
In app hook:WM_SIZE	In addition to preventing the locked application from exiting, AppLock must also prevent the application from enabling the taskbar and resizing the application's window. This message traps a change in the window size and corrects it.	LOG_EX
In app hook:WM_ WINDOWPOSCHANGED	In addition to preventing the locked application from exiting, AppLock must also prevent the application from enabling the taskbar and resizing the application's window. This message traps a change in the window position and corrects it.	LOG_EX
Initializing keyboard hook procedure	AppLock is calling the keyboard hook initialization.	LOG_ PROCESSING
Keyboard hook initialization failure	The keyboard filter initialization failed.	LOG_ERROR
Keyboard hook loaded OK	The keyboard hook dll exists and loaded successfully.	LOG_EX
L after Ctrl	Processing the backdoor entry.	LOG_EX
Loading keyboard hook	When AppLock first loads, it loads a dll that contains the keyboard hook processing. This message is logged prior to the load attempt.	LOG_ PROCESSING
Open failure	The status information is being saved to a file and the file open has failed. This could occur if the file is write protected. If the file does not exist, it is created.	LOG_ERROR
Open registry failure	If the Administration registry key does not exist, the switch to user mode fails because the AppName value in the Administration key is not available.	LOG_ERROR
Opened status file	The status information is being saved to a file and the file has been opened successfully.	LOG_EX
Out of memory for encrypted pwd	Not enough memory to encrypt the password.	LOG_ERROR
pRealTaskbarWndProc already set	The taskbar control has already been installed.	LOG_EX
Pwd cancelled or invalid-remain in user mode	The password prompt was cancelled by the user or the maximum number of failed attempts to enter a password was exceeded.	LOG_EX
Read registry error-hot key	The hotkey registry entry is missing or empty. This is not considered an error. The keyboard hook uses an embedded default if the value is not set in the registry.	LOG_ERROR
Read registry failure-app name	AppName registry value does not exist or is empty. This constitutes a failure for switching into user mode.	LOG_ERROR
Read registry failure-Cmd Line	AppCommandLine registry entry is missing or empty. This is not considered an error since command line information is not necessary to launch and lock the application.	LOG_ERROR
Read registry failure-Internet	The Internet registry entry is missing or empty. This is not considered an error since the Internet value is not necessary to launch and lock the application.	LOG_ERROR
Registering Backdoor MSG	The AppLock system communicates with the keyboard hook via a user defined message. Both AppLock.exe and Kbdhook.dll register the message at initialization.	LOG_ PROCESSING
Registering Hotkey MSG	The AppLock system communicates with the keyboard hook via a user defined message. Both Applock.exe and Kbdhook.dll register the message at initialization.	LOG_ PROCESSING

Message	Explanation and/or corrective action	Level
Registry read failure at reenter user mode	The registry has to be read when entering user mode is the AppName is missing. This user mode entry is attempted at boot and after a hotkey switch when the administrator has closed the application being locked or has changed the application name or command line.	LOG_ERROR
Registry read failure at reenter user mode	The registry has to be read when switching into user mode. This is because the administrator can change the settings during administration mode. The read of the registry failed which means the Administration key was not found or the AppName value was missing or empty.	LOG_ERROR
Registry read failure	The registry read failed. The registry information read when this message is logged is the application information. It the Administration key cannot be opened or if the AppName value is missing or empty, this error is logged. The other application information is not required. If the AppName value is not available, AppLock cannot switch into user mode.	LOG_ERROR
Reset system work area failure	The system work area is adjusted when in user mode to cover the taskbar area. The system work area has to be adjusted to exclude the taskbar area in administration mode. AppLock was unable to adjust this area.	LOG_ERROR
Shift pressed	The Shift key has been pressed and trapped by the HotKey processing.	LOG_EX
Shift	Processing the hotkey and backdoor entry	LOG_EX
Show taskbar	The taskbar is now being made visible and enabled.	LOG_ PROCESSING
Switching to admin-backdoor	The system is currently in user mode and is now switching to admin mode. The switch occurred because of the backdoor key presses were entered by the administrator.	LOG_ PROCESSING
Switching to admin-hotkey press	The system is currently in user mode and is now switching to admin mode. The switch occurred because of a hotkey press by the administrator.	LOG_ PROCESSING
Switching to admin-kbdhook.dll not found	The keyboard hook load failed, so AppLock switches to admin mode. If a password is specified, the password prompt is displayed and remains until a valid password is entered.	LOG_ PROCESSING
Switching to admin-keyboard hook initialization failure	If the keyboard hook initialization fails, AppLock switches to admin mode. If a password is specified, the password prompt is displayed and remains until a valid password is entered.	LOG_ PROCESSING
Switching to admin-registry read failure	See the explanation of the “Registry read failure” above. AppLock is switching into Admin mode. If a password has been configured, the prompt will be displayed and will not be dismissed until a valid password is entered.	LOG_ PROCESSING
Switching to TaskbarScreenMode	In administration mode, the taskbar is visible and enabled.	LOG_EX
Switching to user mode	The registry was successfully read and AppLock is starting the process to switch to user mode.	LOG_ PROCESSING
Switching to user-hotkey press	The system is currently in admin mode and is now switching to user mode. The switch occurred because of a hotkey press by the administrator.	LOG_ PROCESSING
Taskbar hook failure	AppLock is unable to control the taskbar to prevent the locked application from re-enabling it.	LOG_ERROR
Taskbar hook OK	AppLock successfully installed control of the taskbar.	LOG_EX
Timeout looking for app window	After the application is launched, AppLock must wait until the application has initialized itself before proceeding. The application did not start successfully and AppLock has timed out.	LOG_ERROR
ToUser after admin, not at boot	The user mode switch is attempted when the device boots and after the administrator presses the hotkey. The mode switch is being attempted after a hotkey press.	LOG_EX

Message	Explanation and/or corrective action	Level
ToUser after admin-app still open	The switch to user mode is being made via a hotkey press and the administrator has left the application open and has not made any changes in the configuration.	LOG_EX
ToUser after admin-no app or cmd line change	If user mode is being entered via a hotkey press, the administrator may have left the configured application open. If so, AppLock does not launch the application again unless a new application or command line has been specified; otherwise, it just locks it.	LOG_EX
Unable to move desktop	The desktop is moved when switching into user mode. This prevents them from being visible if the application is exited and restarted by the timer. This error does not affect the screen mode switch; processing continues.	LOG_ERROR
Unable to move taskbar	The taskbar is moved when switching into user mode. This prevents them from being visible if the application is exited and restarted by the timer. This error does not affect the screen mode switch; processing continues.	LOG_ERROR
Unhook taskbar wndproc failure	AppLock could not remove its control of the taskbar. This error does not affect AppLock processing	LOG_ERROR
Unhook wndproc failure	AppLock could not remove the hook that allows monitoring of the application.	LOG_ERROR
Unhooking taskbar	In administration mode, the taskbar should return to normal operation, so AppLock's control of the taskbar should be removed.	LOG_EX
Unhooking wndproc	When the administrator leaves user mode, the device is fully operational; therefore, AppLock must stop monitoring the locked application.	LOG_EX
WM_SIZE adjusted	This message denotes that AppLock has readjusted the window size.	LOG_EX
X after Ctrl+L	Processing the backdoor entry.	LOG_EX
Ret from password <#>	Return value from password dialog.	LOG_EX
Decrypt data len <#>	Length of decrypted password.	LOG_EX
Window handle to enumwindows=%x	The window handle that is passed to the enumeration function. This message can be used by engineering with other development tools to trouble shoot application lock failures.	LOG_EX
WM_WINDOWPOSCHG adjusted=%x	Output the window size after it has been adjusted by AppLock	LOG_EX

Revision History

Revision / Date	Location / Change
A / Sep 2011	Initial Release.

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